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# The Journal of the American Medical Association

**Published under the Auspices of the Board of Trustees.**

VOL. XXXVIII. CHICAGO, ILLINOIS, JANUARY 4, 1902. No. 1.

## Original Articles.

### THE SPECIFIC AND NON-SPECIFIC LESIONS OF THE BRAIN RESULTING FROM SYPHILIS AND THEIR INFLUENCE UPON DIAGNOSIS, PROGNOSIS AND TREATMENT.

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That syphilis is due to a specific poison that is capable of causing the development of luetic lesions in non-infected persons is an indisputed fact. Whether this micro-organism belongs to the vegetable kingdom and may be classed among the bacteria, or whether it may be found in the lower forms of the animal kingdom and may be classed with the plasmodia, or whether it may occupy a place between the bacteria and plasmodia must be determined by the scientific investigator. We are as ignorant of the true nature of the virus as was Fernelius, when nearly 400 years ago he formulated the seven laws of syphilis. Syphilis of the brain can not be acquired except the virus enter the blood or other juices of the body through a denuded mucous or cutaneous surface. From the external manifestations of syphilis that we are able to observe, we are justified in reasoning concerning the internal manifestations of the disease, the early developments of which we can not see. While the virus of syphilis reaches the different portions of the body through the medium of the blood and the other fluids of the body, yet it attacks the most vulnerable solid tissues with which it comes in contact. This is shown by the development of a chancre at the point at which it finds entrance into the body. The most vulnerable tissues of the body seem to be the skin, the exposed mucous surfaces, especially of the mouth and throat, the iris and the membranes and blood vessels of the central nervous system, those of the brain standing first. It is a well-known clinical fact that when the skin, mouth, nose and iris escape, or to express it differently, in the absence of the secondaries, the brain and probably other viscera are much more likely to be affected. This would indicate that the virus expends its force on the tissues which it first attacks, or probably the true condition might be better expressed by saying that when the virus of syphilis once invades a tissue that that tissue then loses much of its resisting power to the poison and is most likely to be the seat of subsequent manifestations of specific lesions.

*Pathologic Conditions of the Intracranial Structures in Syphilis of the Brain.*—The lesions of the brain that may directly or indirectly result from syphilis may be divided into three classes: 1, the specific or luetic lesions, those that are caused by the poison of syphilis and by nothing else; 2, those lesions of the brain that may have a specific or non-specific origin, and 3, the non-specific lesions of the brain that occur as indirect results of the syphilitic virus.

It is of the utmost practical importance when possible to distinguish between the specific and non-specific lesions affecting the intracranial structures. Unless such a differential diagnosis is made we are at a loss as to treatment and totally at sea in regard to prognosis. Only the specific lesions, those that occur as direct results of the poison of syphilis, are especially remediable to antisyphilitic treatment; while the numerous injuries caused by the presence of specific lesions or the degenerations resulting from toxemic or other blood states which may possibly result from syphilis, are in no way specific in character, and yield no more readily to antisyphilitic treatment than do lesions resulting from causes wholly unassociated with syphilis.

GUMMA.—The typical specific lesions of the brain is the gumma. The first thing observed, especially in the meninges, is a small spot of inflammation. This soon leads to a knot of granulation tissue, which has been variously described as gray, grayish-red, semi-translucent or gelatinous. Early the new-formed tissue is extremely cellular and later becomes fibro-cellular. This mass of ill-formed granulation tissue, while it may continue to increase in size, soon begins to undergo caseation and fibroid degeneration in one or many spots. Evidence of congestion and inflammation mark the first stage and hyperplasia with degeneration, the second. The formation of the gumma is the direct result of inflammation, which undoubtedly has been lighted up by the poison of syphilis. It will be seen that it differs from the ordinary products of inflammation in being less highly organized and in having a greater tendency to degeneration. When the inflammation set up by the virus of syphilis is acute and violent, the inflammatory products at first vary but little from those of an ordinary or non-specific inflammation. It takes time for the gumma to assume its characteristic form. One of the greatest characteristics of specific intracranial inflammation, especially of the meninges, is its tendency to hyperplasia. The gumma varies in size from a line in diameter to several inches. It may be yellowish, reddish or of a grayish-white appearance, yet it usually has, when of recent formation, the feel and consistence of glue. No matter how large the gumma may become, nor how long it may have existed, it never becomes highly organized.

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The degeneration may take place in one or two ways; either by caseation and fibroid degeneration, or by fibroid degeneration alone. Formation of masses of cicatricial tissues occurs as the result of fibroid degeneration. Gummatous deposits may be single, but they are frequently multiple. The brain substance adjacent to the gumma rarely ever remains intact, as the inflammation spreads to this. Gummata are most commonly found at the base of the brain, especially early, and the region of the interpeduncular space is a favorite site for the deposition of the products of specific inflammation. The sixth and branches of the third cranial nerve are often affected in the early stage. Gummata are often found on the cortex of the brain, invading the sulci, especially of the so-called motor region. They occasionally are found in the pons, rarely in the substance of the cerebrum and least frequently in the substance of the cerebellum. Gummatous inflammation of the membranes, both of the pia and dura is frequent, in fact, this is the most common form of intracranial specific inflammation. In inflammation of the membranes the tendency to hyperplasia is very great and the membranes, especially the pia, become so thick in the neighborhood of the optic chiasma as to present the appearance of a tumor. Inflammation of the dura is usually diffuse and the tissue form undergoes the fibroid change. It is thought to be most common in inherited syphilis. In the pia the inflammation is more commonly local, and the inflammatory products may undergo caseous, or fibroid change.[1] Finally, the walls of the arteries are frequently the seat of inflammation and of gummatous deposits. The sheaths of the cranial nerves undoubtedly may become specifically inflamed, and the nerves themselves damaged, either by extension of the inflammation, by pressure from gummata, or by constriction caused by the cicatricial tissue. That the nerve fibers and the brain substance have a greater immunity from the poison of syphilis primarily than do the meninges, the nerve sheaths and the blood vessel walls seems to be almost, if not, universally conceded, but that the brain and nerve substances are never the primary seat of specific inflammation, is doubtful, to say the least.

*Some of the Specific Lesions and the Non-specific Ones that Result from Syphilis.*—We must remember that while a specific poison is the cause of gummata, these by their presence, lessening intracranial space, by their irritating effects, encroaching upon and injurying adjacent structures, produce intracranial lesions that are in no way specific in character. Before considering the walls of the blood vessels, as affected by syphilis, let us try to study some of the effects of specific inflammation of the meninges. In an attempt at a differential diagnosis between the direct and indirect effects of syphilis, we must keep widely separated the idea of specificity and non-specificity.

I can not reiterate too often that this distinction is of the greatest practical importance in the prognosis and treatment of every case of intracranial syphilis. For the one class of lesions early in the disease, we have approximately specific medicaments; for the other there is no known medication of especial value. Recent gummata at the base of the brain exert pressure on the solid structures and interfere with their functions, the symptoms of the disturbed function depending upon the size of the deposits and their situation. The cranial nerves are compressed and irritated, and the membranes are inflamed. If appropriate treatment is instituted in the early stage, before caseous and fibroid degeneration takes place, and before injuries to the structures compressed become well advanced, the whole morbid process may be removed and a cure, so far as the local brain trouble is concerned, is complete. But, unfortunately, vigorous treatment is not always instituted early; it does not take long for compression of nervous tissue to impair permanently, although it may not destroy, the function. Caseous and fibroid degeneration sets in early. Although the gummatous substance may be completely absorbed, the fibroid and caseous degeneration leads to the formation of cicatrices and bands of contracting cicatricial tissue. These are non-specific lesions, are not specially influenced by specific medicaments, and remain to compress and throttle the cranial nerves and keep up irritation to a greater or less extent in the membranes and in the brain substance. If, perchance, they remain latent, they mark the situation for subsequent specific inflammation on the application of any of the various exciting causes. It is to these non-specific lesions at the base of the brain, which have resulted from specific inflammation, that many cases of impairment of vision, blindness, ocular paralysis, and chronic basilar headaches are due. These, of course, fail to respond to antisyphilitic agents. Many cases of optic nerve atrophy and of permanent paralysis of one or more ocular muscles may be thus explained, both in children and adults; for, it must be remembered that gummata occur as the result of hereditary syphilis as well as from that which has been acquired.

Gummata on the convex surface of the brain are most likely to occur in and around the motor convolutions. The effects, both from the specific and non-specific lesions, on these structures, the cortex and membranes, are the same as when the inflammation takes place at the base, but the symptoms are different. The same remarks apply to the effects of syphilitic growths within the brain substance. It may be added that intracerebral syphilitic growths are rare and probably arise from some portion of the pia. The characteristic form of specific intracranial inflammation is syphilitic meningitis. It is doubtful whether this form of meningitis, in the true sense of the word, is ever acute. In other words, an apparently acute attack of syphilitic meningitis is secondary to a pre-existing local and chronic specific inflammation of the membranes. If this is true, and I have seen no reason to doubt it, a syphilitic meningitis is always subacute or chronic; although acute outbreaks are not uncommon. Great thickening of the cerebral membranes sometimes takes place from specific inflammation. These thickened areas or patches in the membranes denote chronicity, and in consequence, while they are due to syphilitic inflammation, they are degenerative in character, composed of bands of firm fibrous tissue, the results of caseous and fibroid degeneration, and are not purely syphilitic in character. At the base of the brain these bands of fibrous degeneration are most commonly found in the neighborhood of the optic chiasma and in the interpeduncular space. Syphilitic meningitis, involving the convexity of the brain, is not infrequent, especially affecting the pia over the anterior and parietal lobes in the vicinity of the longitudinal fissure. According to my experience, when the dura is inflamed in this region the pia rarely altogether escapes; especially have I observed this when the cranial bones of the vault have been inflamed. The pia.

1. Gowers: Littsomian Lectures on Syphilis and the Nervous System, 1892.

on the other hand, may be inflamed and the dura remain free. In syphilitic inflammation of the pia the cortex is involved in the inflammatory and degenerative processes. We have a meningo-encephalitis which is partly due to meningitis and partly to degeneration of the arteries of the cortex. Here, again, while the specific inflammation has been mild and the specific exudate comparatively slight, the non-specific lesions are extensive, very destructive, will not respond to antisyphilitic medication, and hence are permanent in their effects.

There is one other change in the membranes to which I wish to direct attention. This is chronic thickening of the dura in the posterior cerebral fossa. It is commonly found in childhood as the result of inherited syphilis. I have only seen one case of this affection. It occurred in a child about 3 years of age, the offspring of infected parents. It had been sick for several weeks before it was admitted into the Arapahoe County Hospital. The head was extremely retracted; the body became greatly emaciated; but the patient lived, after it came under my care, one year. At the autopsy the dura of the posterior fossa, especially that portion surrounding the pons and medulla, was thickened, and the seat of old fibrous deposits. Some of these cases are said to have recovered. It is just possible that some cases of reported recovery from tubercular meningitis may have been cases of syphilitic meningitis.

*Blood Vessels in Syphilis of the Brain.*—We now pass on to syphilitic inflammation and degeneration of the blood vessels of the brain. Syphilitic endarteritis and peri-arteritis have been observed and minutely described by nearly every writer on syphilis of the brain, but so little has been said about syphilis of the veins that I shall quote from a case cited by Mickle.[2]

CASE 1.—Female, aged 45, died in an epileptiform attack due to hemorrhage at the brain base, from rupture of a syphilitic vein. There were clear signs of early general paralysis, and tabetiform ones due to diffuse embryonic meningo-myelitis. Syphilitic lesions affected the large vessels of the brain and cord. A diffuse vascular lesion affected the cerebral gray cortex, and in a less degree the subjacent white substance.

The large arteries of the brain present slight patches of ordinary secondary obliterative endarteritis; but the chief lesion muscular connective tonis is lesed; in them the infiltration, forming an intense peri-arteritis, diffuse, but in places nodular —the first stage of a gummatous process. In the veins the muscular connective tunic is lesed; in them the infiltration, although usually diffuse, takes here and there a nodular character, even more clearly, and so as to form miliary gummata when "caseification" sets in. The venous lesion exceeds the arterial at the brain base, where it has led to hemorrhage, and at the surface of the cord, and is largely independent of the meningeal and arterial lesion. The endovena does not show any proliferation; when it is affected it is so through invasion by the gummatous process. Hence, the ulterior tendency of the luetic arterial lesion is to narrowing, obliteration, and their results; in the veins, to hemorrhage.

Personally, I have not met with a case of venous hemorrhage due to syphilitic degeneration of the vessel.

ARTERIES: Gowers, in speaking of arterial degeneration, states that "except in the arteries of the brain and in the aorta, syphilitic disease is scarcely known."[3] In this he is mistaken, as syphilitic degeneration of the spinal arteries is not uncommon.

The walls of the medium, and sometimes of the larger, arteries of the brain are affected by a syphilitic inflammation and gummatous deposit, involving especially the inner coats—the intima and endothelial lining—of the vessels. This process is known as endarteritis, and on account of the tendency to obliterate the caliber of the affected vessel is sometimes spoken of as arteritis obliterans. In some cases, before the caliber of the vessel is closed, a small branch given off by the vessel is blocked and the blood supply to a very small area of the brain may be cut off. If a small artery, especially of the cortex, is thus closed, the collateral circulation may be sufficient to prevent necrotic softening, but it may not be sufficient to maintain the normal condition of the part, and this may explain the spots of induration found in the cortex of the brain, especially in syphilitic children. When the caliber of a medium or large vessel is occluded, necrotic softening in the area of distribution of the affected artery must take place, as the collateral circulation of the brain is so meagre that Nature is unable to provide against such violence. It is important to remember that the final closure of the vessel is due not to gummatous deposits, but to a blood clot formed at the narrowed portion of the vessel. Thus, while the greater portion of the vessel's caliber has been occluded by a specific lesion, the closure is finally completed by non-specific material that is not specially influenced by anti-syphilitic treatment. We have, then, in all cases of syphilitic occlusion of a vessel two non-specific lesions; one, the blood clot that completes the occlusion of the vessel, and the other the necrotic softening in the area of the brain to which the occluded vessel is distributed. These facts should be borne in mind in the prognosis and treatment of all cases of syphilitic thrombosis.

Gowers states: "A second effect is the production of aneurysm of the larger arteries—those that are the special seats of the disease."[3] The explanation given for the formation of aneurysm is inflammation and degeneration of the vessel wall by which extensible fibroid tissue is substituted for the elastic elements.

Mills, in his volume on "Disease of the Brain and the Cranial Nerves," says peri-arteritis attacks the smaller arteries and may give rise to miliary aneurysm and hemorrhage. In a case recently under my observation peri-arteritis involving the nutrient vessels of the pons resulted in local softening and death. Peri-arteritis of the nutrient vessels of the brain is not rare, but hemorrhage into the brain substance from specific inflammation of the vessel is infrequent.

I shall not tarry to discuss cases of supposed specific inflammation of the substance of the brain. Charcot and Gombault reported a case of chronic disseminated inflammation, with foci in the cerebrum, pons and optic nerves, and the tissue in many of the foci had undergone caseation. Barlow has observed foci of sclerosis in the cortex of the brain, without arterial degeneration in syphilitic children.

Gowers observes: "The spinal nerves seem to escape the influence of syphilis, and the cranial nerves suffer chiefly at the base of the brain, where several are involved in a focus of inflammation. To this some of the nerves to the eyeball seem to offer an exception; they may suffer alone. The facial nerve presents a remarkable freedom. The nerves that arise from the side of the medulla are often involved, especially the hypoglossal and spinal accessory causing palsy of the tongue, palate and vocal cord on one side. These palsies are seldom due to any other cause, so that their occurrence should suggest syphilis at once to your mind."[4]

2. W. Julius Mickle: On Syphilis of the Nervous System, Brain, 1895, part 1, pp. 115, 116.
3. Gowers: Syphilis and the Nervous System, p. 19.
4. Gowers: Littsomian Lectures, Syphilis and the Nervous System, 1892, p. 43.

Many of the nerve degenerations, both nuclear and system, are caused by the poison of syphilis. Some of these are evidently due to a primary degeneration of the nerve elements, and others may result from inflammation of the interstitial tissue. Whatever may be the method by which the degeneration is brought about when it has once occurred, antisyphilitic treatment can do no good.

It should be borne in mind that multiple lesions in syphilis of the brain are the rule. It is not uncommon to find most of the larger arteries at the base of the brain affected with gummatous deposits. In cases of syphilitic tumors of the brain it is the exception to find the blood vessels healthy. On the other hand, the walls of the arteries are the seat of numerous gummatous deposits, while the other structures of the brain are free from the appearance of syphilitic disease. We may conclude from this that the blood vessel walls are the most vulnerable intracranial tissue to the virus of syphilis.

## TREATMENT OF NEURASTHENIA.*

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I suppose we all recognize the fact that there never can be any ready-made, hand-me-down treatment for neurasthenia. When we consider neurasthenia from an etiological standpoint, and then attempt from this consideration to evolve a rational treatment that will not only cure the patient but at the same time make him or her comfortable enough to live until the cure is effected, we certainly have ample food to satisfy our appetite for conundrums.

It is all very well to say that the principal causes of neurasthenia are toxin, malnutrition, fatigue, or emotions, and that the treatment depends upon the cause. This of course is so, but it is just as true that we may have a patient that is long on causes and has a neurasthenia that is caused by all of these conditions combined, and this is not all, as the nervous system governs and controls all the organs of the body, and as these organs take advantage of the weakness and irritability of their masters to act in all sorts of irregular and uncomfortable ways, it is no easy task to tell whether their action depends upon the neurasthenia, or the neurasthenia depends upon them. When we consider this jumbled up mess of cause and effect and effect and cause, it is not surprising that we sit down in despair and wonder what to do first. I find it best to first carefully examine the patient, being sure to ascertain the condition of each and every organ as well as possible; also inquire into the habits of the patient. This examination may or may not give us much information, but if it does not, it gives the patient confidence in us, or at least helps to do so, and this I consider a very important part of the treatment.

### CONFIDENCE OF THE PHYSICIAN.

All of us, of any considerable experience, have treated many cases of neurasthenia successfully and probably as many more without success, and as we carefully review our work we are unable to see why one patient should have recovered, and another failed to do so. It is often humiliating to see a patient whom we have failed to benefit, gradually and continuously improve, under possibly the same treatment, in the hands of another physician. We may break the force of the fall by declaring that there was nothing the matter, or they would have improved just the same in our hands. I do not believe that such is the case. The different results are due simply to the fact that we did not have the confidence of the patient, and our successor did. I have become so certain that confidence in my ability to do the very best that can be done for them is such a necessary factor in the bringing about of a cure in these cases, that I rarely take charge of a case of neurasthenia where there seems to be a lack of faith in me; it is true that it sometimes takes more tact and management than I possess, to successfully pass them over, and I am forced to treat them, but I do so with my mind fully prepared for their departure.

Do not think that I believe the only thing necessary to cure these people is faith; for, such is not the case; but a neurasthenic nervous system is lame, and in such a condition that it must have someone as a nervous crutch to help it along from time to time, until once more strong enough to go alone, and as a rule the attending physician must be the support. This is plainly demonstrated by the fact that, after seeing the physician and having a chance to relate their various bad feelings, and being reassured that these are nothing to be alarmed at, etc., for considerable time the patient gets along nicely. But after so long a time we have to go over the same ground again; they require the same reassuring and once more are strengthened and feel better for a longer or shorter period varying according to the condition of their nervous system or the external conditions brought to bear upon it. These things often seem childish to us, who are strong and well, but they are important to the patient, and it is for this reason that our visits and consultations with these people should not be hurried nor too far apart.

### DIET.

Proper feeding is an important, and often neglected part of the treatment. I have seen delicate women who were what we might call natural neurasthenics—that unfortunate class who are launched into life with a nervous system so frail that it can scarcely supply sufficient nerve force to meet the ordinary demands of living—I have seen these delicate women systematically starved for years, while they underwent all kinds of scientific treatment: drugs galore, electricity, massage, and even starvation by rule at well-known sanitariums. After having endured these things, without benefit, while in the hands of men of reputation and skill, they naturally wandered outside of the regular routine and took in the novelties, as osteopathy, etc. After all this I have seen them improve as if by magic when put on a liberal diet of common-sense food, accompanied by such medication as assists nature in digesting and assimilating the food taken. It is not feeding these people properly to place them on a diet composed of these high-priced concentrated foods, that one teaspoonful equals in nourishing power the flesh of two oxen and ten sacks of flour; their stomachs will not stand it, more padding is required. Neither is chopped feed, no matter how well roasted, nor how well and attractively it may be packed, nor how skilfully advertised, nor how highly endorsed by medical authority. We are too apt to think that, because the patient complains of unpleasant and disagreeable sensations in the stomach after having taken food, that the stomach is being worked beyond its capacity, and that the amount of food must be diminished. It has often been a surprise to me to see how one of these starved and pampered

* Read at the Fifty-second Annual Meeting of the American Medical Association, in the Section on Nervous and Mental Diseases, and approved for publication by the Executive Committee: Drs. Frederick Peterson, Hugh T. Patrick and H. A. Tomlinson.

stomachs will behave, when its complaints are treated with silent contempt, and it is regularly and frequently filled with plain nourishing food, such as oatmeal and cream, stale bread and butter, milk, potatoes and beefsteak, soft cooked eggs, etc.

All cases of neurasthenia do not require to be put on a stuffing diet; but nearly all want some considerable attention paid to it. While many cases are suffering from underfeeding or rather no feeding, many others are suffering from overfeeding, or wrong feeding. It is no unusual thing to find men who are exhausted by long and hard mental work, attempting to get rid of their depressed feeling by taking large and heavy meals, which simply aggravate their trouble. I have recently seen one of these men whose occupation required the most exacting and continual mental effort for eight hours during the night, who habitually took a breakfast of baked beans and pork, or a large beefsteak and fried potatoes and finished with some kind of pie, usually mince; then go home and to bed to awake a few hours later, with a palpitating heart and all sorts of paresthesia, which frightened him terribly. This particular man had been under treatment for many months for his neurasthenia, but no inquiry had ever been made as to his diet, although he had consulted several physicians. The rapidity with which he improved when put on a more rational diet, demonstrated the importance of the physician knowing how much and what kind of food his patients are eating, if he expects to treat them successfully.

### FRESH AIR.

Another important thing in the treatment of these cases is plenty of fresh air, and it is strange to say that although there is no end of this great necessity which is all about us, yet our patients suffer more for the want of it than we fully realize. This is well shown by the fact that we have all learned by experience to expect that these delicate cases, which I have referred to as natural neurasthenics, will have a sick spell along towards spring of each year. I have thought these attacks could often, and possibly always, be avoided if these unfortunate people could only have an abundance of fresh air, obtained out of doors during the winter. We hardly realize how long and continuous is the confinement of these frail women, in the close rooms of one of our atrocious modern homes, where often every device that money can purchase and mechanical ingenuity contrive is brought into play to shut out fresh air, and replace it with overheated air that probably has been in the house for days and weeks. It seems impossible to contrive ways and means that will make it possible to get them out each day for a longer or shorter time. They are too feeble to stand the physical exertion necessary to keep them warm, and the weather is too cold for them to get out and sit around without taking exercise; still each year I become a little more determined, and insist a little stronger on their not staying in the house all the time.

### REST.

Rest is also of great importance in neurasthenia, both mental and physical rest, and in no way is this obtained so well as in sleep, which is nearly always poor in this class of people. Good feeding and good air does much to help them sleep, but occasionally and sometimes frequently, for a time, these people must have a suporific. I have found sulfonal, in small doses, usually the best for this, but it should only be dispensed by the physician himself, and if possible the patient should not know what he is taking. For, often the rest by night is desired, only to enable the patient to carry on some exhausting labor during the day, and if he has the drug in his own hands he will get to depending upon it and may do himself much harm, not only by acquiring the habit of using a hypnotic, but also by enabling him to benumb nature and wear himself out without realizing what he is doing; I think the physician should not become a party to any such thing. If people want to ruin themselves mentally and physically we may not be able to prevent it, but we can refrain from helping them. It is sometimes impossible to have people take the required amount of rest at home, where everything continually reminds them of the work they are attempting to forget and abstain from; for this reason it may be wise to advise a change, but this should be done carefully; too frequently the change taken is only a change from one form of labor to another, and the patient comes back to you in a worse condition than when he went away. If he is sent from home he should be sent where he will be able to rest, not where he will have to rush here and there to visit this person and that historical place; these things will divert the mind, but do not rest the tired brain or body, and the latter is the necessary thing, and though some diversion may be required to make the rest bearable, we must keep the fact in mind that this is but of secondary importance.

### MEDICINAL TREATMENT.

Besides the proper feeding, fresh air, and rest, I believe there is a large field for the judicious use of medicine, but to attempt to cure one of these cases, by using the so-called tonics, will be disappointing to both patient and physician. The remedies that I have found of benefit are those that assist in digestion and increase the activity of the liver; the latter organ is too much neglected.

I have been surprised at the benefit that has been derived from a quarter grain of calomel every second night for a week or so; it often produces great pain in the bowels and nausea, but after this, the stomach acts better, the bowels are not distended with gas, and there is a general feeling of well-being in the patient. Besides these, it is necessary to relieve the many distressing sensations which are annoying the patient. I will not attempt to enumerate these, for they are all so well known to us that it would be a waste of time to do so. I will add that I have found, as a rule, that the older and more simple remedies are usually the producers of the best results in relieving these things and do not leave as bad a condition as many of the newer and higher-priced ones.

In closing this paper, I wish to say that I am well aware that the ideas here advanced are not new. I have found them of importance in my own work, and so generally ignored in the practice of many with whom I come in contact, that I feel it my duty to keep continually calling the attention of the profession to rational management of this affecion, instead of being lead hither and thither by those will-o'-the-wisps, so persistently dangled before us by interested parties.

### DISCUSSION.

DR. J. H. MCBRIDE, Los Angeles, Cal.—It is a significant fact that the man who first gave us a rational treatment for a certain class of nervous disorders, Dr. Weir Mitchell, was the author of those beautiful essays called "Characteristics," which show how thoroughly he understood human nature and what we may call the psychology of daily life. The physician who does not grasp the mentality of his neurasthenic patients

may cure some of them, but he will cure them by accident, for the mental condition is the first thing to understand. A very important consideration in the management of the neurasthenic is the outdoor life and exercise. In Southern California where we have 340 sunny days in the year we have an ideal climate for such people. The neurasthenic should be told by the physician how far to walk and how often and when. The details should not be left to others. A veranda or pavement is not a good place for an invalid to walk. Walking on a pavement is much like running a sewing machine. The soft, yielding ground is the better place. The patients should be forbidden to climb hills until they have grown strong. A patient of mine lately overdid this and had to return to bed. I can hardly endorse the Doctor's prescription of oatmeal and cream. Oatmeal is a pasty mass and the mixture is not easily disposed of by the delicate stomach. The indigestion and prostration of many of these people are not infrequently aggravated by their living on liquid diet. I recently began treating a lady who for many months had lived almost exclusively on liquid diet. I gave her a beefsteak at noon, and she said she had less trouble with it than with any meal for a great while.

DR. JOHN PUNTON, Kansas City—The treatment of neurasthenia is very important from the standpoint of the general practitioner, and I think the question of expense ought to be considered in any paper on the subject. Many patients who would attempt to follow the plan of treatment outlined in Dr. Biller's paper would require a considerably larger bank account than they could command. It is necessary to make some provision for the poorer neurasthenics, as well as for those who subsequently become insane, because I believe there is a close relationship between neurasthenia and insanity. In fact, it has been claimed that the more serious forms of neurasthenia are really forms of insanity. It is very difficult to draw a line of demarcation between an aggravated neurosis and mild melancholia. I think every state should make some provision for neurasthenics belonging to the poorer class.

DR. C. EUGENE RIGGS, St. Paul—In the treatment of neurasthenia the best tonic is good food. The iron preparations are of value in their proper place, but better than these and more essential is nourishing and easily digestible food. Nor should we underrate the importance of the confidence of the patient in the physician, although I do not regard this as absolutely essential, because if we have the case well in hand, and understand this subject as professional men should, we can so handle our patients that faith will come in consequence of the success of our treatment. As to whether we should advise a neurasthenic to travel or not, that is a two-edged sword. It may benefit him or it may harm him. I remember the case of a man who had apparently recovered from his neurasthenia. He took a continental tour, and while away from home developed acute melancholia and finally committed suicide. I know of other cases where travel resulted disastrously, and I feel that in any case it should be advised with much caution.

DR. HAROLD N. MOYER, Chicago—I think that the problem we have to deal with in the treatment of neurasthenia varies in different parts of the country and according to a man's clientele. We have to adapt our treatment along the general lines laid down by the essayist, but it must be modified according to the indications of the individual case. I would emphasize the suggestion that a large dose of "Doctor" should be given with any form of treatment. In two cases of neurasthenia under observation during the last winter one was cured by complete rest, and in the other the patient recovered under a modified rest cure, a modification of the treatment in both of these cases consisting of keeping the patient in the open air for several hours each day, even when the weather was very cold. On the first day one remained in the open air for four hours, on the second day for six hours and on the third day for eight hours. The improvement in this case was immediate and remarkable. The nutrition was influenced beyond anything I had ever seen in connection with the rest cure. In another case, where I was not able to have the patient taken out of doors and could only remove the windows of her apartment for a part of the day, the result of the treatment was not quite so marked, but still it was satisfactory. I simply mention these instances to show the value of out-of-door treatment in a climate like that of Chicago in mid-winter, which I consider far ahead of that of Florida or Los Angeles or any of the so-called "soft" climates.

DR. F. SAVARY PEARCE, Philadelphia—In regard to the best form of exercise for neurasthenics I would recommend horseback riding, for the twofold reason that the patient does not exert himself too much and gets plenty of fresh air, and furthermore, because a man can not think about himself while riding horseback. I have seen excellent results follow this form of exercise. I certainly disagree with the suggestion made by Dr. Punton regarding state aid in the care of neurasthenics. For the same reason, I would dissent from the possibility of anything in the line of institutional treatment in these cases, because we wish to remove these patients from an environment which would tend to increase their introspection.

THE CHAIRMAN, DR. H. A. TOMLINSON, St. Peter, Minn.—The question of proper feeding in its relation to the treatment of nervous disease is a very important one, and its consideration leads one to appreciate the force of the dictum of Sidney Smith: "The Lord made the food, but the Devil made the cooks." The physician himself is not sufficiently acquainted with the chemistry of food, or its proper preparation, to say how it should be prepared and know when it is properly done. Food is more often spoiled in cooking than improved and wrong preparation will make any food indigestible. People in general have queer tastes and appetites, and this is especially true with regard to neurasthenics. Another important element in the treatment of these cases is elimination. While we are coming to appreciate the important part played by autointoxication, we are not as fully alive to the fact that the results which follow from that intoxication are made possible by faulty elimination.

In the care of the neurasthenic at his own home we meet with the difficulty of dealing with a certain class of people who have neither the domestic facilities to properly care for the patient, nor the mental training necessary to appreciate the importance of the various phases of treatment; and it therefore becomes essential, as Dr. Moyer has already pointed out, that a large element of "Doctor" should enter into the treatment of these cases, and that the attending physician should carefully train a member of the family to carry out his instructions. The foolish sympathy and constant solicitude on the part of the various members of the family, as well as the lack of will power to control the patient, often renders futile the efforts of the physician in the treatment of these cases. These may appear to be trivial points, but I believe that many failures are due to our not appreciating them.

DR. J. G. BILLER, in reply—In regard to the question of diet, I only referred to it in a general way. I agree with the gentleman who spoke of the value of beefsteak as an article of diet in these cases. I look upon large, well-cooked steaks as a very important part of the diet. The majority of our cases of neurasthenia occur among poor people, and it is a conundrum to know what to do with them. The burden falls on the physician, who frequently lays down his rules of treatment only to find at his next visit that they have been amended at the suggestion of some of the neighbors. As regards travel in these cases, it is a thing which should be prescribed with care. I recently had an illustration of its harmful influence in the case of a neurasthenic woman who was in very good circumstances financially. She was an ambitious and intelligent woman, who did a great deal of intellectual work, reading papers before societies, etc., and in the course of time she broke down and developed symptoms of neurasthenia. Frequently, at night, she would have attacks when she thought she was going to die. I did what I could for her, and fortunately, about that time, she developed typhoid fever; this gave her a good rest and when she recovered from the typhoid her neurasthenic symptoms had also disappeared. Subsequently, she again took up her literary work and traveled extensively, attempting to visit as many historical points as possible, and as a result of this she again developed symptoms of neurasthenia, for which she is now, I believe, under the care of an osteopath.

# THE NERVOUS RELATION IN DISEASES OF THE NUTRITIVE SYSTEM.*

HENRY S. DRAYTON, A.M., M.D.

NEW YORK CITY.

We may postulate as a general statement that those who have given attention to the causal relations of American dyspepsia are agreed that our social habits, our methods of business, our irregularities and excesses of diet, and our nerve excitability, lie at the bottom of most of our stomach troubles. As a single causal factor it would be agreed that the wear and tear incident upon our excessive nerve activities as a people are much too severe for the maintenance of gastric integrity. The strain almost continuously put upon the central nervous system reacts disastrously at the sympathetic foci of food conversion. Nevertheless, it is not the amount of work actually done, not the muscular exertion nor the nerve labor in itself that are responsible for the diseases of the stomach and intestine; but it is the manner in which the work is done, the excitement and irritation to which we subject ourselves.

## AIDS TO DIGESTION.

With this very brief reference to the etiologic factors of our national dyscrasia, let me pass to a brief consideration of the trend of opinion with a large class of pathologists concerning the treatment of gastric disorders, which may be introduced in the following parliamentary style: Whereas digestive enfeeblement is due to incapacity of the organism for the proper conversion and assimilation of food stubstances, to-wit—the stomach failing to secrete its normal juices, the liver being incompetent to produce sufficient bile, the pancreas too feeble to supply its quota of emulsifying fluid to the duodenum, the spleen overcrowded for the exercise of its function, it is necessary to supply in some convenient form, as mechanically or chemically prepared, compositions and extracts organic or inorganic, which shall aid to the effective operation of the digestive apparatus, and thus supplement the needs of human nature for tissue nutrition.

How respondent to this is the manifestation of interest on the part of druggist and chemist, who would supply the physician with the organic derivatives, the peptonates and the diastases, and other kindred incitants of stomach function! The professional consensus is thus complemented by the commercial or business interest, and it would appear that such a combination should meet the popular demand in so happy a fashion as to furnish relief to all digestional woes. But is this the case? Really far from it. Indeed, so far from it that there are some physiologists who assert that we are almost as much in the dark with regard to understanding the vital procedure of digestion as were our grandfathers; and however skilfully we may treat stomach and intestine our peptonates and maltates and enzymes will have but a limited range of usefulness. Whether the trouble of our patient be salivary, peptonic, amylaceous, hepatic or what not, the products of the laboratory fail to produce the intended effect.

One has said of amylaceous dyspepsia: "It has long been a problem of the profession, a *bete noire* of disease which we could not reach. If we used alkalies we rendered the saliva too alkaline; if we prescribed acids we neutralized the naturally existing alkalies, so necessary in that fluid. . . . It does not always happen that digestion occurs in the test tube exactly as it is thought to occur in the human stomach; there are, however, many things to be gathered in the study of digestive ferments from theories in the lecture room and tubes in the laboratory."

The experiments of Beaumont with Alexis St. Martin, and the later experiments with tubes that are introduced into the stomach of the living subject furnish many lessons regarding what nature does with this or that substance.

## NATURE'S RESOURCES.

In our zeal to provide aids and substitutes for digestion the proper value and capacity of natural function seems to be overlooked. We limit the power and quality of the nervous apparatus having relation to gastric function and need to be reminded that nature has endowed it with a very broad field of adaptation as concerns foodstuffs; it will appropriate to the purpose of nutrition substances widely different in composition. From the whale blubber of the Eskimo to the viscid clay of the Ottomacs its capability of conversion indicates a protean diversity, so that the term "omniverous" of the naturalist is not far-fetched in its application to the human alimentary function.

Of the races and tribes of the world scarcely two feed alike, yet all find in the products of their habitat sufficient material, be it animal or vegetable, of the land, sea or air, to satisfy the cravings of appetite. The peasantry and laboring masses of Europe content themselves for the most part with cereals—oatmeal, bread, potatoes, rice, barley and maize—with the addition of vegetables, milk, butter, cheese, oil, etc., according to custom, or necessity. The well-to-do Englishman demands his mutton chop or rib of beef as essential to his vigor, while the Scotchman maintains a higher degree of general robustness on his porridge and milk. The hardy "bashi-bazouk," after a day's hard fighting amid the mountains of the Caucasus, regales himself with black bread and onions, while that Yankee of the far East, the nimble Jap, is content with a handful of rice to begin and end a day of severest toil.

It is not long since physiologists found it necessary to modify views on tissue nutrition that had been regarded for a long time as standard. The teaching that foods were divided into muscle-building proteids and the oxidizing carbonaceous foods is now disproved, and we are more certain that nitrogenous or proteid tissues are not alone the result of proteid compounds and that fat accumulation in the body is not due altogether to consumption of fats and carbohydrates. It is also known to the experimental observer that hard work has little if any effect in the consumption of nitrogenous tissues beyond the degree of such consumption when the person is at rest; while muscular activity is attended with loss of carbonaceous matter. The disposition of mankind at large to use a large proportion of the carbonaceous compounds in their diet is thus seen to be but a natural expression of physical need.

Assuming, however, that such a proposition as that proposed by Professor Voit to be correct, namely, that in the foodstuffs required to maintain equality between bodily income and expenditure, there should be five times as much of the fats and carbohydrates as of the proteids, man has but to eat sufficient food to obtain these proportions at least. It must be noted that the proportion above stated is the result of studying the relation of diet to physical exertion. People generally respect the demands of the appetite and pay little attention to eco-

* Read at the Fifty-second Annual Meeting of the American Medical Association in the Section on Physiology and Dietetics, and approved for publication by the Executive Committee.

nomic principles in their choice of a dietary. To be sure, more regard is paid by modern society to the hygiene of diet than formerly—yet is dyspepsia less common among us? I would not go the length of Fothergill in decrying the use of artificial digestives, but I feel justified in maintaining with Manges that the usefulness of the various ferments, etc., in gastric disorders is a limited one. Further, I would call attention to the fact that this opinion finds a recognition in most of the later treatises on the physiology of digestion or diseases of the stomach.

### RELATION OF NERVE FATIGUE.

While the chemist may obtain results in tube or beaker that appear very definite in character as regards the potency of a certain enzyme, it must be appreciated that the biochemistry of the human body is quite another thing, that the processes of life have certain peculiar properties in their operation that are entirely wanting in the action of the pepsin or the ferment that is mechanically placed in the laboratory tube. Certain reactions may be positive enough in the test tube, but in the stomach those reactions may never occur, or be so modified by the conditions within the stomach as to be quite negative in result. Hence it is that the physician is so often disappointed in the sequelæ of a treatment of which he had formed a most sanguine view. The nervous relation of alimentation, the vital sources of gastric change, had not been sufficiently considered; the power of the stomach secretions to decompose and change, and counteract the remedies exhibited had not been adequately estimated.

Further still, it is to be considered that nature has reserves that may be put into the gastric field and do excellent work in cases considered desperate. Even in the absence of pepsin or rennet in the secretions of the stomach membrane, there are the various enzymes and salts of the pancreatic, hepatic and intestinal secretions that are capable of doing the work of conversion. Kellogg[1] reports as one result of a careful examination of the stomach contents of nearly 4000 patients having chronic disorders of that organ, that a deficient amount of ferments was discovered in but 1 per cent. of them all. The fact that these ferments exist in the body and that their deficiency may be the cause of intestinal disorders is the chief warrant for the administration of the artificial substitutes. Probably it is no libel to say that a large number of us employ them as a convenient form of placebo in cases where the patient's condition suggests little if any active medication. This is done, too, with the impression that if the ferment does no good it will do no harm—an illogical notion, and really pernicious in effect. These artificial substitutes for the natural products of a living organism may do harm. This has been urged by Brunton, Laabe, Grote and others, and in the circulars and "essays" of the manufacturers we may daily read of the inadequacy and inequality of this or that peptonate marketed by some competitor.

But of the contentions and rivalries and theories of chemists and dieteticians, the great body of people care not a jot. To satisfy appetite is the main purpose of eating with them, and that which is simple, "hearty" and coarse is preferred to the elaborate dishes of the epicure. Note the buxom men and women, the plump, red-cheeked children of the laboring classes, especially those from other lands; their intelligence rises not into the realm of contemplating their food through the glasses of the hygienist. The sturdy mechanic sits down to a table that is laden with a stew, or a roast, or a soup, flanked with a side dish of potatoes or cabbage, a liberal chunk of bread and a cup of coffee or tea, eats to contentment, and afterward goes to his bench or recreation without a thought of his stomach. Your cultivated merchant or professional man, fastidious and finical in his eating, is troubled with a rebellious stomach; his nerves are over-sensitive. The elaborate variety he deems of so much importance to good digestion and thorough nutrition does not save him from pyrosis and constipation.

The hospitals and sanitariums for chronic disease are attended in the great majority by dyspeptics. These furnish us a history of nerve function irritated and worn by irregularities and negligence, and if they find relief and healing at their chosen retreat, it is because of its simple food and restful régime.

### CONCLUSIONS AND COROLLARIES.

Looking at the subject of nutritive failure from the point of view of nerve fatigue it is not so remarkable that the broken-down stomach will exhibit as a rule a ready capability for the recovery of its functions when given the needed opportunity by the abandonment of the unnatural course of life that has impaired it. If in ordinary affections of the alimentary system the nerves play an important part, how much more important is their relation to wasting diseases, such as tuberculosis, carcinoma, ulcers, diabetes, chronic nephritis, etc., diseases that force the food question into most conspicuous notice! I believe myself warranted in saying that here especially the office of the nerve centers is accentuated and must be taken into careful account with regard to any treatment. In kidney maladies prohibition of starchy foods, oils and fats may appear to modify symptoms favorably, yet the continued decline of the patient in strength indicates that the good supply of proteids we may put into his stomach is not properly assimilated. The "restricted diet" is not what is indicated, and we return to the "all around" feeding; there follows a gain in weight and the patient feels better generally.

But does the absence of carbohydrates in the so-called "diabetic dietary" prevent the production of sugar? No. The blood contains sugar, normally. The tissues contain a good proportion of the carbohydrates, and thus in themselves furnish the material for the organic production of glucose. These are facts to be appreciated in our management of kidney derangements. A healthy man could not live on a purely nitrogenous diet, as Landois says, and as experience teaches; so that in a disease of such rapid metabolism as diabetes it is apparent that the food should be as much as possibly of the mixed variety.

That the nervous apparatus of the stomach must play a large part in the diabetic expression seems to me to be clearly made out by the fact obtained in the exhibition of codein, to which high value is very properly given as a remedy in the therapy of diabetes. Several years ago while on my way to Northern Vermont to attend a consultation I fell in with an elderly clergyman, who, learning somehow of my profession, gave me a history of his experience as a diabetic. He had been a missionary in Africa for many years, and finally, on account of the malady, was compelled to withdraw from active service. On his route homeward he fell in with an eminent English physician, who put him on "codeia" with such excellent effect that he found himself after a little time in a comparatively comfortable state, and he assured me that this was the situation at the time of our meeting.

A little thought upon a case such as this would make

1. Modern Medicine, March, 1896, p. 57.

sufficiently clear the relation of the nervous system to the gastric and renal lesions involved in functional innutrition and convince us of the existence of a neuro-alimentary dyscrasia as the basic elemtn in the malady. The pathologic showings, such as we have, of the importance of the duodenum as a functional center for those metabolic changes by which saccharine matter is derived, intimate the relation of the "second stomach" to the etiologic factors in diabetes. Dr. J. M. Allen, in a paper before the Association, in 1899, reviewed the symptoms, and pathologic evidences in twenty-six cases, and arrived at the conclusion that it is the duodenum in which chiefly occur the lesions that are causative of the dreaded malady. Taking into consideration the origin and distribution of the par vagum and the connection of the duodenum with the sympathetic centers, he is inclined to regard "peripheral irritation as the more probable factor in the disturbance of the glycogenic function. Brown-Sequard and others have well established the fact that reflex irritation is sufficient to arrest and prevent secretion, and, if continued long enough, to produce structural change of tissue."

### TREATMENT.

In the detail of treatment founded upon these conclusions, he advises the taking of such foods only as can be digested in the stomach, thus allowing the duodenum to rest, and preventing congestion. For the control of reflex irritation morphin or chloroform three times a day is advised. The principle in view is not deprivation of the carbohydrates in the food given, for the sake of avoiding the excessive secretion of sugar, but to supply the diabetic with ample nutritive material, and at the same time afford the nidus of functional derangement the quiet essential to recovery of normal condition. The use, then, of codeia by the older physicians is seen to have a physiologic foundation, and, with our better comprehension of the procedure of digestion, we should be enabled to combine the principle of rest with the principle of appropriate feeding in treating diabetes and allied maladies more successfully.

Reviewing the points involved in the field I have traversed with such brevity, is it not clear that one factor in the vital economy of the human constitution has been much neglected, viz., the relation of the nervous system to digestion? Is it not a matter of oversight that heredity may be a causative factor of diabetes, or that a gouty diathesis has a relationship to its existence, or that there is a possible connection between it and a disordered pancreas, as Von Mering and Lepire appear to insist? Nevertheless, the chief objective in the management of diabetes is to bring about a better nutritive condition, an improved constitutional feeling, a more cheerful view of one's personal relations to life.

On this account have we not resorted to methods in treating dyspeptic cases that were either quite unnecessary or contributory to greater disturbance of the alimentary organism? Instead of inducing calm have we not considered it necessary to give excitants and stimulants to arouse the weak and atonic stomach, when what was really required by its nervous apparatus was rest? After all our generalizations we have not fathomed the mysteries of nutrition, and the fact remains that nature in the recesses of subconscious activity can better manage the procedure of tissue building and repair than we can with all the wonderful array of tonics, emulsions and extractions. If it be rational to "give the devil his due," it should be more reasonable to give the gastro-intestinal system credit for capacity to do its own work, and not hastily or deliberately interpose obstacles to hamper or prevent its effort to serve us.

### DISCUSSION.

DR. WINFIELD S. HALL, Chicago—I believe the recommendations of Dr. Drayton are in line with a general movement in the medical profession, namely, that of a very much less degree of medical interference and of giving Nature a chance. I am heartily in sympathy with his views regarding the giving of digested and partly digested foods. I believe the custom has the same deleterious effect upon the alimentary canal as that of putting an arm into a sling and expecting its muscles to develop. We can not develop the secretory glands if we furnish for them the substances which they ought to be allowed to secrete for themselves.

DR. H. S. DRAYTON, in reply—We are organized naturally to want those stuffs which we deem foods. We have different degrees of appetite, and it is impossible for anyone to determine the exact amount of food which should be placed within the stomach of an individual. Experiments have been made by many biologists without special result in this regard. We remember the case of a distinguished professor, Dr. Oliver Wendell Holmes. He lived for many years by rule. He did not reach the age of a centenarian, though he died an old man, to be sure, probably attaining the good age because of his method. We see men living beyond the period of Oliver Wendell Holmes who give little thought to the quantity of food that they should eat. If we look over the array of old men in this country we would find that the majority belong to the class who are indifferent as to the quality and quantity of food which they take from day to day, and certainly quite indifferent to the scientific relations of their food.

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## LIVING ON BREAD.*

ALEXANDER HAIG, M.A., M.D. OXON., F.R.C.P. LOND.
Author of "Uric Acid as a Factor in the Causation of Disease."
LONDON, ENG.

There are several forms of the uric acid free diet as I have elsewhere mentioned,[1] such as: 1, that which consists of milk, cheese, potatoes and fruit, and contains no bread; 2, that which contains these things with more or less bread and breadstuffs, and 3, the form with which I am concerned to-day, in which bread and breadstuffs form the chief sources of nourishment and a small quantity of fruit and vegetables are taken merely as sauces for the bread.

For the sake of comparison I shall give the approximate quantities required in each of these diets for a man of 140 pounds weight, who is supposed to be young and leading an active life, and therefore requiring a rather full diet, one that will yield 3.3 grs. of urea per pound of body weight per day.

The milk, cheese, potato and fruit diet for this man would be about:

| | | Per cent. albumin. | | Albumin. |
|---|---|---|---|---|
| 2½ oz. cheese | containing | 33 | = | 350 grs. |
| 3 pints milk, | " | 3 | = | 787 " |
| 15 oz. potatoes, | " | 2 | = | 126 " |
| 16 oz. fruit, | " | 2 | = | 137 " |
| Total | | | | 1400 grs. |

We see at once that this is a diet containing a large amount of fluid, and that nearly all the nourishment is obtained from the milk and cheese.

The mixed diet might be:

* Read at the Fifty-second Annual Meeting of the American Medical Association in the Section on Physiology and Dietetics, and approved for publication by the Executive Committee.

1. "Diet and Food," J. & A. Churchill, London, 3d Ed., 1901.

| | | Per cent. albumin. | | Albumin. |
|---|---|---|---|---|
| 10 oz. bread, | containing | 8 | = | 340 grs. |
| 2 oz. oatmeal, | " | 12 | = | 104 " |
| 2 pints milk, | " | 3 | = | 525 " |
| 1½ oz. cheese, | " | 33 | = | 210 " |
| 1 oz. nuts, | " | 16 | = | 68 " |
| 18 oz. fruit and vegetables | " | 2 | = | 153 " |
| Total | | | | 1400 grs. |

And lastly the diet with which I am now specially concerned might be for the same man:

| | | Per cent. albumin. | | Albumin. |
|---|---|---|---|---|
| 11 oz. bread, | containing | 8 | = | 340 grs. |
| 12 oz. biscuit, | " | 10 | = | 516 " |
| 2 oz. rice, | " | 5 | = | 43 " |
| 4 oz. macaroni, | " | 11 | = | 188 " |
| 4 oz. oatmeal, | " | 12 | = | 208 " |
| 5 oz. potatoes, | " | 2 | = | 39 " |
| 4 oz. fruits, | " | 2 | = | 32 " |
| Butter and oil *ad lib.* | | | | |
| Total | | | | 1400 grs. |

The bread may be taken chiefly as toast, or, like the rice and macaroni, it may be made into pudding.

A biscuit may be eaten after the meals, simply carried in the pocket and eaten between times, when there is an appetite. This is one of the points with regard to such a diet, that toast biscuits and similar breadstuffs can be eaten almost all day long without strict attention to meal times; they can be added after the meal is over or before the next meal is begun, in a way and to an extent that milk and cheese could not be used, without causing severe dyspepsia.

The oatmeal may be taken as porridge twice a day, and it should be thoroughly well cooked, not ten minutes or twenty minutes, but it should be placed in a double kettle and left on the fire or by the side of it all day. The same is true of rice and macaroni; they can not be too well cooked.

The porridge may be mixed with a liberal allowance of butter and some salt, though others may prefer sugar. The rice may be eaten with olive oil and salt, or with fruit or jam. The potatoes may be mixed with oil or butter and eaten with the bread, biscuits and cereals; or other vegetables in season may be substituted for them and used in the same way. The fruit may be taken with the bread and cereals, either raw or cooked, or as jam, or in puddings.

No doubt there are many who can not at once take as much bread and breadstuffs as are here given, and I myself, when a meat eater, used to be a great meat eater, and rarely took more than three or four ounces of breadstuffs in a day. But the habit of eating larger quantities can be gradually acquired, and I myself can now manage sixteen ounces a day without difficulty.

Those who can not take the above quantities of bread and cereal foods must take a little milk and cheese, say: one ounce cheese, 33 per cent. or 140 grains albumin; one pint milk, 3 per cent. or 262 grains albumin, a total of 402 grains, and then take sufficient cereal foods to supply 1000 grains of albumin.

Though I can not do it myself, there are some who can live on the above breadstuff diet, which, of course, can be modified by substituting other cereals in ways I have no space to mention, and my experience seems to show that those who do live on such a diet, or even on its modified form, with a little milk and cheese, gain several important advantages. First of all, many people are unable to take much milk and cheese, partly because they do not like them, partly because they fail to digest them; while bread is a much more important article of diet all the world over. It is more generally eaten and to a larger extent than any animal food, and it is only in a comparatively small part of certain countries, chiefly in Europe and America, where the diet has come to consist almost entirely of flesh, that bread has come to be but little used. It has long appeared to me that this which is pre-eminently the food of man is deserving of study and attention.

Then milk and cheese, if taken beyond quite small quantities, may undoubtedly cause constipation and pale, powdery evacuations, which are so hard as to increase the discomforts of piles, from which meat eaters so often suffer, and even to tear the mucous membrane at the anal orifice. Milk especially, under the conditions which attend its distribution in large towns, is a vehicle for many diseases, and to be rendered even moderately safe must be boiled or sterilized. Again, milk in any quantity, as when two to three pints per day are taken, may cause dyspepsia from a mere excess of fluid; this tends to dilate the stomach, it dilutes the gastric and intestinal juices, and the result is that fermentation and dyspepsia may take the place of digestion.

Similar unfortunate results are produced by the silly practice of putting in uric acid containing foods with one hand, and trying with the other to wash out the excess of this substance by copious libations of fluid far in excess of thirst and its demands. As I have for years been pointing out, it is far better to leave the uric acid outside the body, and then there will be no need to dilate the stomach—as the Germans are said to do with excess of beer—or gorge the blood vessels and even dilate the heart with fluids for which there is no necessity, and which are, after all, of but very little use in eliminating uric acid.

So far as I know there is but one rule: Eat when you are hungry and drink when you are thirsty; and if you go beyond this you are certain to suffer; but to introduce unnecessary uric acid and then to try to wash it out with unnecessary water is to pile suffering upon suffering, even to the destruction of life itself.

Similarly in disease, as in the high blood pressure conditions from which flesh eaters and tea drinkers so frequently suffer, it is little short of insane to pour in fluids in excess of the demands of thirst. Look at these poor sufferers, how they improve on a drug that frees the capillaries and lowers blood pressure and allows of a diuresis; see how they improve further on a purge of calomel and colocynth that sweeps out a few pints of fluid from the intestines. And yet the very people who have watched this improvement may go on in thoughtless routine to pour into the patient hour after hour ounces of fluid in excess of the requirements of the body, far in excess of thirst, for in such cases there is often none, with the result that they dilate the stomach, gorge the vessels and increase the dilatation of the heart, which it was their object to diminish.

The great advantage of the bread diet in certain conditions of dyspepsia, and especially in conditions of high blood pressure, morbus cordis, and dilated heart, is that it is a dry diet; that the fluid taken can be reduced to one and one-half pints or even one pint in twenty-four hours, till nature asks for more by making the patient thirsty, and then alone can we be sure that we are not giving too much. The great point in the taking of breadstuffs and that which prevents them from causing dyspepsia, is their thorough and complete mixing with the saliva in the mouth; and this is greatly facilitated by taking them in a dry state except for a little butter. And

for this reason dry breadstuffs, as toasted bread, biscuits, rusks, into which the saliva can penetrate easily, are much more readily and certainly digested than such things as new bread, bread and milk, porridges or milky puddings, into which the saliva can only get slowly and with difficulty and after more or less dilution with other fluids.

There are some people who can take breadstuffs in any of these conditions and digest them without difficulty or dyspepsia, but those who do suffer should remember to take them only in that condition in which complete mixing with the saliva is possible and easy; dry breadstuffs can generally be taken by every one and eaten at irregular hours and between meals without dyspepsia. Even the possession of teeth is not necessary, for if dry breadstuffs are well sucked, they become completely mixed with saliva and softened by the aid of the tongue and gums. So that those whose teeth have been ruined by the fibers of meat and fish, for which nature never intended them, can continue to live on a breadstuff diet even without any teeth at all.

There is one other advantage of breadstuffs which I have also mentioned elsewhere, namely, their relatively slow digestion and metabolism, in virtue of which they give a steady supply of force and urea over a number of hours, thus accounting at least in part for the great powers of endurance shown by the animals that live on them.

And now I give a figure to illustrate one or two points with regard to this. It shows the hourly excretion of urea in grains on two days, which are placed on the same

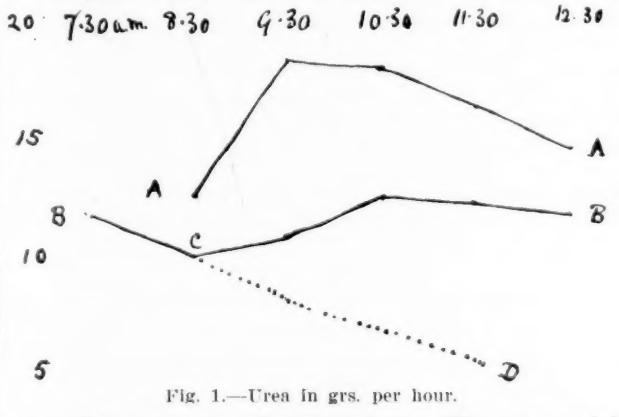


Fig. 1.—Urea in grs. per hour.

paper for purposes of comparison. The curve AA shows the effect on the hourly excretion of urea of taking half a pint of milk at 8:30 a. m., no food or drink having been taken since the previous night. The curve BB shows the effect of taking at the same hour a nearly equivalent meal of albumins in the form of toast and biscuits with some water. The broken line CD shows the probable fall of urea if no food had been taken at 8:30, and is a continuation of the fall which was taking place from 7:30 to 8:30 as shown in the line BC.

The position of urea at 8:30 on these two mornings differed by some two grains, and the fall in urea that was taking place or that would have taken place if no food had been continued probably differed also. The absolute effect of the albumins taken as bread is the difference between the lines CD and CB, and the absolute effect of those taken as milk is the difference between AA and a relatively similar fall to that in CD. The object for which the figure is given is to draw attention to the fact that 130 grains of albumin taken as milk at 8:30 a. m. produce a much more rapid rise in the formation and excretion of urea than a similar quantity of albumins taken as toast and biscuit, and that the rapid rise is followed by a rapid fall. It also shows that the albumins and force from milk are largely worked off in the first two hours after it is taken, while those from breadstuffs are spread over a longer period; the rise is slower and continued longer.

As I have elsewhere said, those who get their albumins from milk are in the position of a motor supplied with a quick burning oil which gives out great force for the first two hours, but is sooner at the end of its resources, while those who get albumins from breadstuffs can not produce so much force in the first two hours, but will be able to go on longer.

This is a part of the physiology that lies behind the superior powers of endurance shown by grain-eating animals; for, as I have for some years been pointing out,[2] strength and power rise with rising urea, and fall with falling urea, and, in fact, are in all conditions proportional to urea; so that the collapse that follows on severe dyspepsia or shock, is little more than the suspension of absorption of albumins from the stomach, with the consequent suspension of the formation of force and urea. The digestion and metabolism of flesh much resembles that of milk, hence the lion and tiger can give out enormous force over a relatively short period of time, while the elephant, the bull or the horse can outlast them, and perhaps produce even more absolute force in a longer period.

This is probably what patients mean when they say—and it is, I think, a common experience—that a meal of breadstuffs lasts longer than a meal of meat; for with falling urea and diminished force production, the need for more albumins is felt as hunger. This may come after a meal of milk or flesh, say in three hours, but after a meal of similar albumin value in the breadstuffs, not for four hours.

Breadstuffs form a very convenient diet for those who are moving about the world, for they can be obtained almost anywhere, while milk and cheese it is often difficult or impossible to get. Breadstuffs also can, if necessary, be conveniently carried in the form of grain, meal, rice, macaroni or biscuits.

These cereals have been the foods of mankind in the past, and they are still the foods of the great majority, and only in parts of a few countries where flesh eating has been carried to great excess, have they fallen somewhat into the background. But here, as elsewhere, the majority are right, and the minority pay an enormous price for their unnatural but stimulating food. Among the flesh eaters, disease and death are rampant, the natural term of human life is but rarely attained, and even the shortened life is too often rendered both useless and miserable.

Let any one who might at first sight be disposed to doubt this statement observe for himself how many meat eaters and tea drinkers between the ages of 17 and 23 have normal blood, not merely normal as compared with a standard fixed by meat eaters, but normal as compared with that of those of the same age who have never touched meats. Let him observe how many flesh-eaters from the age of 45 onwards have either normal blood or normal circulation, and do not suffer either from dyspepsia, depression and insomnia on the one hand, or from arthritis, lumbago, sciatica or bronchitis on the other—not to mention Bright's disease and diabetes.

DISCUSSION.

DR. WINFIELD S. HALL, Chicago—I believe that one could

2. "Diet and Food," Ed. 1, 1898, Ch. 1.

scarcely have kept track of the rapidly growing literature of this question of the influence of the metabolism of nitrogenous food upon the general nutrition without being impressed with the effect that in the vast majority of cases in England and America the general custom is to take too much nitrogenous food—too much meat. It seems to me that there are two rather antagonistic positions taken in Dr. Haig's paper. I can not reconcile his statement concerning the perfect parallelism of nitrogenous ingesta and egesta with varying muscular force and work capacity, with his insistence upon a bread diet. Bread diet is largely a carbonaceous food and has to be taken in very considerable quantities to get a sufficient amount of albumin. The muscular power varies largely with the oxid of the carbonaceous rather than of the nitrogenous element. The nitrogenous element is, I consider, absolutely essential up to a certain amount. After that it is excreted or oxidized day by day, so that the nitrogenous excreta after a certain minimum is going to vary with the nitrogenous ingesta. This maintains the nitrogenous equilibrium. I have read nearly all that Dr. Haig has written, and am in sympathy in general with his opinions. I wish sincerely that he were here, for I believe he would clear up this which seems to be an ambiguity in his presentation of the subject.

DR. DAVID PAULSON, Chicago—It is surprising how little attention the medical profession gives to the subject of practical dietetics. We have been so busy studying pathology and surgery that we have but little time to give to dietetics, the very neglect of which is causing so much material for pathological study. Something which Dr. Haig wrote several years ago led me to undertake some experiments to determine whether or not the quantities set down in the ordinary text-books were not in excess of the real amount required by the human system. I, therefore, selected ten medical students and had them weigh the exact amount of fully toasted bread consumed each day for two weeks. The majority of this class of ten students were young men and women who were working their way through medical college. The average amount consumed was 16 ounces a day of nearly water-dry bread. Every member of the class gained in weight, some as much as three pounds on 16 ounces of bread a day. A second experiment was undertaken upon nearly 300 healthy young people, and it was found that they consumed on the average 16 ounces of starch, 2.8 ounces nitrogenous food, and 1.5 ounces of fat; this investigation was continued for several weeks. It may be fairly assumed that this is not far from the normal proportions, as these young people selected the food for themselves from an extensive bill of fare. Their weight was taken at the end of each week, and the entire experiment was conducted with the most careful and scientific accuracy by the Battle Creek Sanitarium Laboratory of Hygiene. It was shown from this that the figures set down by Pettenkofer and others are entirely too large for us to follow, in this country at least, and, secondly, that we normally use a larger amount of carbonaceous food than has been generally supposed. One part nitrogenous to four parts carbonaceous, as has been suggested by some, is certainly altogether too high. This tends to overstock the system with nitrogenous food elements and tends to produce the uric acid diathesis. I do not agree with all Dr. Haig's conclusions, yet I do believe that the medical profession is greatly indebted to him for the valuable researches that he has made in dietetic lines. I have been interested in noticing the power of endurance possessed by persons who live on a uric-acid-free diet. It has been my fortune to study some of the leading long distance runners, etc., and a number of the most successful of them live upon an entirely non-flesh dietary. The long-distance bicycler, Nelson, is, I believe, a vegetarian. In these long distance races the flesh-eaters will generally lead for a short time, but the non-flesh eaters will almost invariably out-distance them, and get off their bicycles as though they had had no special exertion, while the others often have to be assisted. Another cycler who a few years ago made a large number of successful long-distance records used no meat, nor tea, nor coffee. He stated to me that when he started out on short-distance runs the meat-eaters could out-distance him, but when they had reached the last ten or fifteen miles they would be nearly used up, while he would be almost as fresh as when he had ridden only fifteen or twenty miles. I have been much interested in metabolism of nitrogens, and believe that there is much more to this subject than we now see. I hope we shall soon acquire more definite and satisfactory knowledge in this direction.

DR. JAMES PUTNEY, Charleston, W. Va.—It seems to me as if Dr. Haig were seeking to secure recognition of facts which physiologists have recognized for some time. The average of nitrogenous food is given as 100 grams per day. In the interesting account which Dr. Paulson has given us we see that the students live upon 16 ounces of bread per day, about 2 ounces of nitrogenous material. This is not so much out of the way so far as statistics go. It seems to me, too, that Dr. Haig is taking a one-sided view in his remarks about uric acid results. It is well recognized to-day that there are two classes of uric acid cases—cases of dietetic origin, and cases of tissue destruction origin. I question whether the larger class is not the latter. It is true that we find among those people whose muscular exercise is deficient a tendency to ingest excessive quantities of food. This gives rise to the assumption that disorders of the nitrogenous metabolism are due to that fact. It should also be remembered that there is an equality in the gastric function. Nothing is better recognized to-day than the fact of the breaking down of the leucocytes attended with the development of uric acid. This indicates the distinction between those cases of nitrogenous disorders of metabolism traceable to the short cut, which the nitrogenous elements of food in excess take and the long course which the nitrogenous metabolism of tissues involves. As an illustrated case on this I want to submit the following: Mr. G., 59 years, full habits, temperate, good history, when he partook of full meat diet suffered most intense headaches and would be in bed for a day or so. With meat diet cut off, he would not have attacks until he returned to meat diet again.

THE CHAIRMAN, DR. CHARLES M. HAZEN, Richmond, Va.—I fancy Dr. Haig wishes most of all to insist upon a vegetable source of albumin, so as to get rid of ready-formed uric acid and other waste nitrogenous matter. In a recent monograph by Dr. Mallet, of the University of Virginia, it is shown conclusively that such products as kreatin and kreatinin whenever present in meats simply load up the system with proteid material of no value whatever. The point was touched upon in our discussion of the last paper in connection with food products from animals, in which it was stated that exhausted beef could not furnish proteids suitable for food.

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## METAMORPHOPSIA VARIANS.*

WILLIAM H. DUDLEY, M.D.

OPHTHALMIC AND AURAL SURGEON TO THE EASTON HOSPITAL.

EASTON, PA.

It is possible in presenting this subject that the writer is simply going over ground that has been well covered before; though, with the endeavor to find some reference to it during the past five years, I have left no opportunity unimproved to do so, and yet without success. In fact, the subject of metamorphopsia, except that caused by the correction of astigmatism, has received but very little attention by any writer on ophthalmology to whose works I have had access; and if the cases of this variety are as uncommon as I am led to believe, the following may prove of some interest.

On June 6, 1896, while examining C. F., aged 45, for his refraction, and when obtaining his best vision with his right eye, he remarked that it was difficult to make out the line—the 30-foot line—on account of the rapid movement of the letters. He stated that they would approach each other, and again separate quite rapidly, and that the different letters of the line were continually moving up and down in an extremely irregular manner,

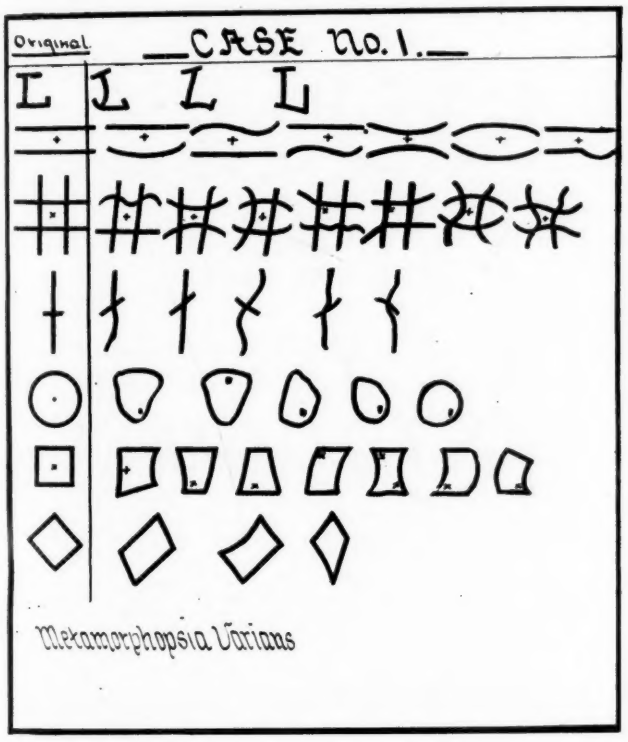
* Read at the Fifty-second Annual Meeting of the American Medical Association, in the Section on Ophthalmology, and approved for publication by the Executive Committee of the Section: Drs. J. A. Lippincott, Casey A. Wood and H. V. Würdemann.

and at the same time the outline of the various letters were undergoing continual change.

Inasmuch as this patient was a man of more than ordinary intelligence, occupying the position of superintendent of the erecting department of one of our large railroad repair shops, I felt bound to pay some attention to his statements and investigate the subject somewhat farther.

I will state here that the left eye was found normal, with the exception of a moderate amount of hyperopia, which when corrected with +1.25 D.S., saw 20/20+, and that in binocular vision, no metamorphopsia was present.

The right eye was then placed under full mydriasis, and the various anatomical parts studied separately. The cornea showed no variations from the normal, by focused or reflected light, and although a mechanic, it showed no maculæ caused by foreign bodies, which such patients are likely to present. Examined by the Javal ophthalmometer, model 1889, it showed one-half diopter of astigmatism with the axis 105°, but perfectly regular;




all the circles and radiating lines on the large disc of this instrument were perfect.

In using the skiascopic mirror, no irregularities of the refractive media could be made out. The aqueous was clear, and the lens was transparent throughout.

The lens was now examined for possible irregularity of outline, or density, or the possibility of a lenticonus; but the reverse shadow at the point of greatest refraction, which is present in these cases, was absent, as well as the wheel-like motion, which is observed in the shadow, where the central portion of the illuminated area has a greater degree of refraction than that surrounding it; in short, the skiascope revealed nothing unusual in an eye with +.75 D.S. and +.50 D.C. axis 105°, which was his proper correction.

Neither the plain mirror nor the ophthalmoscope showed any variation from the normal in the appearance of the vitreous, which was absolutely clear throughout. The result of the examination of the background of the eye was equally negative. The appearance of the optic disc, distribution of blood vessels, as well as the macula, were entirely free from any abnormality.

In observing the diagrams, the left-hand column represents the original figures, the remainder, those seen by the patient.

The changes which were said to take place in certain outlines were now studied, and he was directed to do this at a distance of fifteen feet, and was asked to record on a tablet some of the changes which these various outlines underwent. At first he was directed to look, with the left eye covered, at a 100-foot L, when the letter took on the various changes represented on the diagram. Next he was asked to look at two parallel lines 100 millimeters long and 25 millimeters apart, with a small cross in the center between them, when all and many more of the changes here represented took place. I will state here that all of these drawings are copies of those made by the patient himself, while the examination was being made.

He was then directed to observe a double cross, with a small cross in the center, of the same general dimensions as the former figure, with the result that all the lines underwent rather rapid changes in their shape and direction; sometimes the vertical lines were more affected, and sometimes the horizontal, and sometimes they were all affected at once, as will be observed in the diagrams. He was then directed to look in succession at a vertical line, about 10 centimeters long, with a small cross at its middle; a circle 6 centimeters in diameter, with a dot in its center; a square 4 centimeters across, with a small cross in its center, and a diagonal square of about the same dimensions as the previous figures, fixing his vision on the small cross, and the distorted figures here shown are a few of the shapes these figures presented.

This examination was made both with and without his glasses on; with his pupils wide; and also with his accommodation intact, and the result was always the same.

These observations were continued with the patient looking through a stenopeic slit, and the pinhole disc, when the result was the same, with the exception that the changes were much slower. Various colored glasses were also used, and the only difference observed was a reduction of the rapidity of the changes; and it appeared to make no difference by what means the reduction of light entering the eye was obtained, whether by the stenopeic slit, the pinhole or by colored glass, or by glass of different colors so far as my observations went.

The reduction of the frequency of the changes by reducing the amount of light entering the eye was utilized in making the diagrams; for with full illumination the rapidity of changes was so great that it was very difficult to carry the impression long enough to record it on paper, while with a colored glass, or a narrow slit, it could be done much more readily.

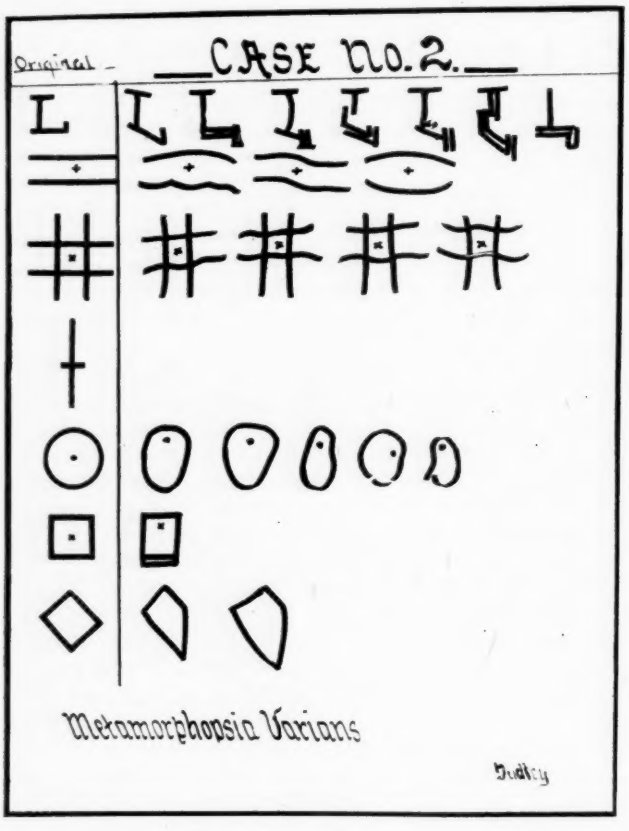
In order to determine the area of this metamorphosic region, the patient was directed to look at the various corners of one of the large diagrams and the metamorphopsia was found to extend a little over a degree in either direction, which is about as far from the point of fixation as the average individual would be able to state whether a line was straight or curved, especially with the added confusion of constantly changing position of the lines in the intervening space.

CASE 2.—Mr. J. H. M., aged 50, consulted me May 24, 1897, in reference to his refraction. The same methods of examination described in the previous case were used in this, but no lesion or physiological peculiarity in any of the refractive media or fundus could be made out.

While examining his right eye for his distance vision he complained that the letters did not retain their shapes or positions in the line, and that some of them would disappear, to return an instant later; others would move up and down about one-half their height, but not much sidewise.

This gentleman is a merchant, though at times he has paid considerable attention to landscape drawing and painting, and was, therefore, able to reproduce on paper quite accurately what he saw.

In going over the subject with him I used the same diagrams which were used in the previous case, and the accompanying drawings represent as nearly as possible some of the forms which these figures took on. While looking at a word at reading distance one or two of the letters in the center of the word would move up, and the whole word would be likely to form a curve, with its convexity up, to remain but an instant, and then to return to take on some other unusual form. In studying




these figures, it will be noticed that the horizontal lines are the ones most affected, while the vertical lines changed but little.

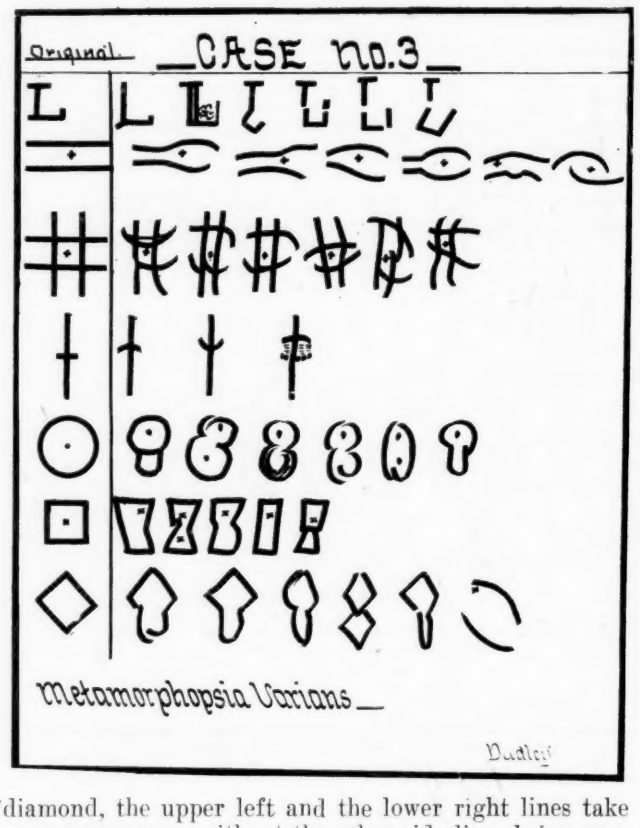
As this patient's home is several hundred miles from Easton, it has been impossible to obtain but a single opportunity of studying his case; by correspondence, however, I learned a year or so after my examination, that whenever he used the right eye alone the same varying metamorphopsia was present.

CASE 3.—Mr. G. M. R., aged 57, came June 23, 1898, for an examination of his eyes, and here again while examining his right eye, the patient complained of the letters moving about and changing their shapes.

As this gentleman, like the others, was a man of more than ordinary intelligence, a member of a large wholesale firm in the town, I felt I might rely upon his statements, and accordingly went through all the various methods of examination as in the previous cases, and therefore unnecessary to repeat here. The result was negative so far as the eye itself was concerned, but inasmuch as there were some points so unlike the others they may be described. For example: while looking at the circle, it appeared to elongate; then a constriction would appear near the center, when it will appear for an instant like a figure 8, and sometimes with a dot in both circles and sometimes not.

While looking at the vertical line with the cross, the cross would curve sometimes up and sometimes down, and at the same time would appear double, and the two cross lines would approach and become one, and again separate. In looking at the square with the dot in the center, this figure would undergo many of the changes observed in the circle; it would elongate and sometimes become contracted in the center and sometimes not, and also would occasionally have two dots, one in the upper and one in the lower part.

In studying the diamond-shaped figure it sometimes took on nearly the figure of 8 form, as in the square and circle, but when looking at the left corner of the




diamond, the upper left and the lower right lines take on convex curves without the other side lines being seen at all.

In order to determine the actual extent of the metamorphosic region, he was requested to look at the center of a card with radiating lines, and was asked to observe how far these lines were affected from the point of fixation, and a careful measurement showed the area to cover about one degree, or thirty minutes either way from the point of fixation.

In observing the changes which took place in the various figures, this patient stated that when he gazed steadily at a figure for a few seconds it would go through certain changes for the period of a few seconds, when the changes would cease and remain stationary till the point of fixation was changed a little or he winked, when the process was set in motion again.

In this case, as in No. 1, the reduction of the intensity

of light was followed by a reduced frequency of the changes, and was made use of in the same manner in making the diagrams. In this case the vision of the affected eye was 20/40 and was not improved by glasses; in fact, by skiascopy the eye appeared emmetropic, and doubtless without the metamorphopsia it would have had full acuity of vision. In this case also the left eye was emmetropic and vision normal.

This patient feels that he is able to fix pretty accurately the time when this disturbance began; he states that when about 15 years old he began to shoot with the rifle and became something of a crack shot, but at about 25 years of age he found he could hit nothing, became discouraged and gave up the rifle, though he did not know that the eye did not see as well as the other till becoming presbyopic and was examined for glasses.

In reference to the cause of the peculiar changes which these outlines undergo when observed by these patients, I have endeavored to settle the question as nearly as possible in reference to the refractive media, and it seems to the writer that pathological changes and physiological peculiarities of this region can be eliminated, as cause of the metamorphopsia.

At first I was inclined to believe that the location of this disturbance must be central, but upon more careful study of reported cases of hemianopsia it seems that those due to destruction of the visual center of one side, the vision at the macula has been preserved on both sides, which if true, would leave but one location for the disturbance, viz., in the retina, and this of a form not producing ophthalmoscopic lesion.

It may be suggested that some small lesion of the retina producing a metamorphopsia, being accompanied with a small amount of nystagmus, might be held responsible for this visual disturbance. In endeavoring to settle this question I had Case 3 look through the Maddox groove, and it did not show the rapid oscillation of the line which one might expect, if a nystagmus existed; though I am of the opinion that in some cases of monocular nystagmus this disappears in binocular vision, which would render this test invalid. I may also state that in examining these cases with the ophthalmometer there was no oscillation observable.

It is now five years since my observations began with the first case and three years since Case 3 was first examined, and recent examination of both of these cases shows the same varying form of metamorphopsia to exist.

It will be noticed that all three cases were males; in each the right eye is the one affected; and inasmuch as they were unable to get the metamorphopsia in binocular vision, neither became aware of his defect till about the time he became presbyopic and had his eyes tested separately.

DISCUSSION.

DR. S. D. RISLEY, Philadelphia—The very careful and elaborate study Dr. Dudley has made of his cases removes the paper from the realm of discussion since all conceivable causes of metamorphopsia seems to have been excluded. I am inclined to believe that minor grades of metamorphopsia are not so rare as would seem to be indicated in literature, but I have always been able to discover its cause. The chief interest in Dr. Dudley's cases therefore seems to center about the absence of any explanation for the distortion of the images, in the three instances he has presented for consideration.

DR. G. C. SAVAGE, Nashville, Tenn.—In the cases of metamorphopsia presented to us in his paper, Dr. Dudley has considered that the cause could be either refractive, retinal or mental. By means of retinoscopy he was not able to find any refractive cause that would account for the metamorphopsia. With the ophthalmoscope he was not able to find any changes in the fundus. He was, therefore, almost forced to the conclusion that the metamorphopsia was mental. I do not agree with the Doctor that there are three causes for metamorphopsia. The one of his three that I would leave entirely out of the question would be the mental. I do not believe that there is a mental metamorphopsia. If there had been a refractive trouble in either of his cases that could have caused the visual changes, he would have detected same by means of the retinoscope. I believe it possible for retinal changes to exist that would result in metamorphopsia without our being able to detect any thing wrong by means of the ophthalmoscope. In any thickening of the choroid behind the macula, whether that thickening be due to the exudation of serum or a deposit of plasma, there must of necessity be a disturbance in the relationship of the cones. Every cone and every rod should point towards the center of retinal curvature. LaConte has beautifully said that "the rods and cones see ends on." If these ends are pointed towards the center of retinal curvature there could be no metamorphopsia other than refractive, but if they be so disturbed that some point in one direction and some in another, then metamorphopsia must exist. We all know how patients complain of metamorphopsia when there is a beginning central choroiditis. If Dr. Dudley's cases had been congenital, I would be inclined to the idea of a loose arrangement of the rods and cones. The variableness of the metamorphopsia in his reported cases constitutes an interesting feature.

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## A PLEA FOR GREATER UNIFORMITY OF STRENGTH AND EXACTNESS IN OUR MEDICAL ARMAMENTARIUM.*

C. F. WAHRER, M.D.

FT. MADISON, IOWA.

The subject of my paper may not be new to anyone here, and, like the longing for immortality and the fabled Fountain of Youth, may be somewhat utopian in its nature, yet we must not forget that keeping eternally at it has often been followed by good results.

We certainly can not admire Shakespeare for the originality of his subject-matter, for everything he wrote was either old history or romance before he was born, but the manner in which he put it, and the way he said things and made his hearers and readers feel it, there is where Shakespeare is great. So if I can impress you with what I have to say in such a manner that you can all feel it, and so it will do good, my ambition will be satisfied.

We are all aware that in the good old days we guessed at many things, at diagnosis, at etiology, at pathology if it was considered at all, and also at the therapeutics that entered into our treatment. We do some of these things better now. We diagnose almost perfectly, by means of instruments of precision, by reasoning, by an improved symptomatology, by bacterial and chemical tests, by reflexes and many other means. The microscope also aids in our pathology, which in many instances we may call perfect. We know more of the etiology of diseases and this alone also suggests the treatment. Of these achievements we are not only reasonably proud, but feel that we are peculiarly blessed that we live in this *x*-ray age, so full of possibilities for us all. But in one thing still much, very much indeed, is desired, and that is after all the main thing, namely, our therapeutic means of combating disease. We may be somewhat blinded by the fact that the number of our remedies is wonderfully increased. Many old and use-

* Read at the Fifty-second Annual Meeting of the American Medical Association, in the Section on Materia Medica, Pharmacy and Therapeutics, and approved for publication by the Executive Committee: Drs. Thomas Hunt Stucky, Leon L. Solomon and N. S Davis, Jr.

less remedies are now no more used, toads' eyes, lizards' tails and bats' wings, and the blood of black cats, bugs and other vermin are no more the source of our therapeutic resources; neither do we now use metal tractors to draw out the diseases, nor do we any more depend upon the royal touch, nor fear witches nor the evil eye. Osteopathy, christian science and absent treatment have replaced all these.

Notwithstanding all this, I want to ask you seriously, has this branch of medicine, namely, materia medica, as far as real merit of the matter that enters into our remedies, kept step with the rapid advancement of other departments of the healing art? I believe I must answer this negatively; not because chemists and pharmacists have been idle, neither has experimental therapeutics been slow to come to our aid, for, as before said, many new and really valuable remedies have been discovered, old ones replaced by better ones, or new uses found for the old ones, but we have not paid sufficient attention to the quality of the goods we use in fighting disease.

You know by this time that fluid extract of ergot varies as one to fifty, gelsemium the same, that cannabis indica varies all the way from nothing up to the most lethal and intoxicating character, while opium, digitalis and ipecac, the latter now almost extinct, vary from two to a hundred fold, not only in the finished product, but in the original drug, depending on locality of growth, methods used in preservation, age, and finally, in preparation. Even the rules of the pharmacopeia are faulty in giving us drugs of uniform strength, especially when we consider the fluid extracts, the solid and powdred extracts, tinctures, elixirs and other forms made from these. If to all this we add the cupidity and dishonesty and ignorance of many manufacturers, and the insufficient laws governing the output of their laboratories, and augment this by ignorant, dishonest druggists, and often careless and sometimes ignorant prescribers, the outlook for the sick man is anything but cheerful. I hope I shall never get sick.

Now what is the use of making a diagnosis, which entails so much study and worry? We auscultate, percuss, and look through the microscope; we analyze blood, urine, and sputum; we make bacteriological cultures, and test eyes, hearing, and the reflexes; we palpate; we explore with the *x*-ray, sounds, specula, meatoscopes, laryngoscopes, and otoscopes; we catheterize ureters, and a few of us, at least, examine the fundus of the eye with an ophthalmoscope, and in fact, what do we not do to a patient? Well, we finally arrive at a diagnosis. We know what is the matter; then we begin to prescribe, and the trouble begins.

Without going into details and naming the drugs that fail in relieving a given symptom, I just desire to say, that it may be put down as an axiom that good, well-made medicines when applied by a wise physician, usually respond as we desire, and, when they do not and we feel sure of our diagnosis, the blame properly rests with the preparation we use. This calls, on our part, for preparations made according to some uniform standard, by an honest, upright manufacturer, who has a proper pride, coupled with a sensitive conscience, in his business; one who feels that human life and happiness depend upon him as much as they depend upon the doctor who uses his products. He should feel that his is a high calling, not only for the dollar and dime, but also for that noble cause that makes life worth living. But since there are almost thousands who are the opposite, who have only the commercial side in view, we must use only such products, in the absence of suitable laws to protect us and our patients, as we know are reliable either in their very nature, or by the guarantee of the manufacturer.

Of the first class are the alkaloids, glucosids, and well-known mineral derivatives. Such alkaloids as morphin, quinin, cinchonidin, strychnin, cocain, atropin, and the glucosids, like digitonin, digitalin and others; the mineral salts, like calomel, iron, sulphur, silver, and others we know, are more reliable than are the crude drugs from which they are made, or any of their pharmacal preparations, especially when made by unscrupulous manufacturers. And when these same unscrupulous men offer us polypharmacal mixtures of the handorgan and shotgun variety, we are all the more at sea. Why should any physician allow some fake manufacturing firm to prescribe for him some anti-phthisine, anti-pneumonine, anti-dyspepsin, or anti-febrin, that has not even a qualitative label on it, and if it pretends to have, it is only partly so—saying it contains 1 per cent. iron, 2 per cent. quinin and other valuable ingredients, mixed in a menstruum of which we are the sole patentees. Thousands such mixtures are offered physicians daily in their offices by wily sample fiends who are sent out by these vampire manufacturers. The worst of all is, that the profession buy these slops, and even give testimonials, many of them signed by Pro. Big Medicineman of the College of Physicians and Surgeons of Sodom and Gomorrah, who recommended them to his classes and could not practice medicine without them.

Every professor in a medical college who gives such testimonials to proprietary and polypharmacal nostrums should be promptly dismissed from his chair; then let him give his undivided attention to the nostrum mill of which he is undoubtedly a silent partner.

There is a whole city full of prominent doctors somewhere on the banks of the Mississippi, nearly every one of whom has given testimonials to poppyine, anti-somnia, or Teapot's chlorids. And there are others! I am glad to state, however, that we have a few who strive for higher things, and these should be encouraged.

Merck of Darmstadt, Germany, and such as Parke, Davis & Co., of Detroit, Mich., are striving to prepare drugs and medicaments that are of standard strength and uniformity. These goods they call standardized, and the process, standardization. With some products they accomplish this by filling them to a certain percentage with their active principles, and where such is not possible, to test them physiologically on animals and control experiments.

If we encourage the manufacturers of such goods, and use whenever we can alkaloids and mineral products and their uniform salts, looking to quality and never to price, and ask for similar laws to the pure food laws enacted in some of the states and some foreign countries, we can then hope for a better state of things, and a more cheerful outlook for the sick man. This might be brought about also in a measure by just such bodies as the great American Medical Association. Let a committee be appointed to memorialize the committee that revises the pharmacopeia, to introduce better and surer methods in the manufacture of medicines; also let it memorialize Congress to give us laws to protect the consumer of drugs, the same, at least, as protects the butter eater from oleomargarine. Such a committee may finally accomplish something.

As long as we use uncertain missiles, at uncertain distances, with the uncertain hope that something may do some good, I see no use in drilling our medical recruits

for four or five years, at an immense expense of money and energy, unless we can equip them at the end of that time with a more exact and uniform armamentarium. Remember you may possess the diagnostic ability of a Flint, an Osler or a Loomis, the therapeutic knowledge of an Eichhorst, Wood or Hare, and yet all this ability is perfectly helpless in the presence of inert drugs and dishonest medical purveyors and manufacturers.

However, declamation is useless. Let us do something and keep at it till we succeed. Much of the present evil is due to the fact that many doctors do not study their texts on materia medica as assiduously as when they crammed for their diplomas, but they read trade journals and floating literature on semi-proprietary preparations, whose virtues are extolled by their exploiters. These are little less than common nostrums, and are only combinations of well-known ingredients, one of which is usually some form of alcohol. Let us all stop this, study more faithfully our materia medica, the physiologic action of medicines, and their bearing upon pathologic lesions, and in a short time much of this evil will pass way. Only when we ask for better things can we hope to get them.

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## STANDARDIZATION OF CRUDE DRUGS AND GALENICAL PREPARATIONS.*

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Does a given quantity of any medicinal agent produce under similar conditions approximately the same therapeutic or toxic effects? There can be but one answer to this question, and that an affirmative one. Granted that individual susceptibility shows surprisingly wide variations, and that vital reactions are profoundly modified by accidental causes, not always obvious, it remains true that from a certain dose of any potent drug we expect to obtain certain definite results, which we regard necessary for the restoration of our patient to a normal status.

It is true that in adjusting the dose in each particular instance, we take into account the factors of age, sex, general physical condition and known idosyncrasy on the part of the patient; the very fact that we do this places emphasis on our convicition that a given dose will produce in a normal subject reactions of a definite known kind and degree. In other words, we assume that the medicine we prescribe is uniform in activity.

When that medicine is a definite chemical compound we may have confidence that one grain or one gram of it will under identical conditions produce identical effects, provided, of course, that the remedy itself is exhibited in the same physical condition in each instance—an important proviso sometimes.

A large proportion, however, of the drugs we prescribe are not of definite chemical composition. Such remedies as opium, henbane, nux vomica, digitalis and ergot consist of crude products of the vegetable kingdom, containing variable proportions of certain active constituents. The most of us find it still necessary to use this class of remedies in our practice. They constitute, indeed, the greater proportion of our materia medica, and claim and receive recognition in all the pharmacopeias of the world.

Many of them, it is true, contain definite active constituents which we also employ—in some cases almost to the exclusion of the drug from which they are derived. We no longer prescribe Peruvian bark as an antiperiodic; quinin is every way better. We use constantly strychnin, atropin, morphin, codein, etc., where, a generation or two ago, we should have had no choice but to prescribe the crude drugs from which these alkaloids are respectively prepared. There are not wanting those who insist that scientific medication requires that we abandon altogether the use of crude drugs, or their galenical preparations, in favor of the active constituents to which is due in each case the therapeutic efficiency of the agent. That is the goal towards which we are tending, but it is a goal as yet far off. For another decade at least we must continue to depend to a large extent upon remedies compounded in Nature's laboratory. The pharmacopeia that must serve us for these ten years must still contain herbs, roots, barks, seeds and fluid extracts, tinctures and similar preparations, and we shall still be compelled to prescribe these if we are to give our patients the benefit of every resource of medication.

In the case of a number of valuable drugs, we have as yet no scientific method of determining beforehand the activity of a given sample. We do not know positively what is the active constituent, nor we have no means of determining with any precision how much of the known active constituent is present. We may judge something of the quality of the drug by its odor or by its taste. Otherwise we must find out what work it will do by actual trial. Must that trial be made upon our patients? Surely not, if it can be done in any other way. True, we may often feel our way in the use of a remedy without prejudice to the welfare of our patient, but the plan is one not to be adopted except in case of necessity. A very much better plan is that of trying the remedy upon some of the lower animals, condemning any which does not produce the effects recognized as those normally produced by the drug in question.

This, however, is a branch of my subject which I barely touch in passing. I wish rather to deal with the class of drugs that contain a definite known active principle, which can be easily isolated and quantitatively determined.

To what extent are drugs of this class found actually to vary in strength? That depends upon the drug. In the case of leaves, herbs and roots, it is common to find one sample two, three, five or even ten times as strong as another. The conditions under which the plant is grown, the season of collection, the length of time it has been kept in stock, the care or want of care that has been taken to guard it from the injurious effects of atmospheric moisture, all have their influence, greater or less, in the case of different drugs. The bark of a tree or shrub, particularly the root bark, shows less variation in strength, and less susceptibility to injury from moisture of the air, and seeds, provided they are properly ripened, are still more uniform and stable in composition; but even in the case of seeds, one sample may often be found to have twice the activity of another.

These facts have been better known generally to pharmacists than to physicians. Manufacturers of fluid extracts began, twenty years ago, to attempt to standardize some of their products by assay. The value of the principle was recognized at once by physicians, and the more progressive manufacturers have continuously improved their assay processes so that their products to-day are substantially uniform in strength, if susceptible of exact assay. Many of the assay processes in use by them are

* Read at the Fifty-second Annual Meeting of the American Medical Association, in the Section on Materia Medica, Pharmacy and Therapeutics, and approved for publication by the Executive Committee: Drs. Thomas Hunt Stucky, Leon L. Solomon and N. S Davis, Jr.

confessedly imperfect, yet even an imperfect method of standardization is better than none at all.

Our pharmacopeia is far behind the manufacturing pharmacists in this regard. The only crude drugs whose strength is regulated by assay in the pharmacopeia of 1890 are opium and cinchona bark. Crude opium must contain at least 9 per cent. of morphin; powdered opium not less than 13 per cent. nor more than 15 per cent., while cinchona bark must have not less than 5 per cent. of total alkaloids and at least 2.5 per cent. of quinin. The pharmacopeia provides also for jalap, the requirement that it shall contain at least 12 per cent. of resin, and for scammony that 75 per cent. of it shall be soluble in ether.

Owing to government supervision of importations of opium, the standard in the case of that drug has been reasonably well maintained. It is doubtful whether any particular attention has been paid to the standard for cinchona bark except by some of the manufacturing pharmacists and by a few conscientious retail druggists, unless it has been in some state like Ohio, where pharmacopeial standards have been enforced by local legislation. It is certain that jalap of pharmacopeial standard is hard to obtain anywhere.

The present pharmacopeia does not provide standards for preparations of cinchona, like the fluid extract and tincture, but it does so for the various galenical preparations of opium, except the camphorated tincture, and for those of nux vomica. The pharmacopeia of 1900, which will not be issued certainly much before 1903, will enlarge very greatly the list of drugs and galenicals for which standards are prescribed. It is safe to say that belladonna, coca, colchicum, hydrastis, ipecac and stramonium will be included in the new list, together with all their galenical preparations. In the case of nux vomica, the assay will determine the amount not of total alkaloids, as at present, but of strychnin, which is now recognized as practically the only active principle of the drug.

Unfortunately, standardization of drugs by physiologic or pharmacologic tests has been ruled out in the instructions given to the present pharmacopeial revision committee. While I recognize the fact that this class of tests necessarily lacks the mathematical exactness which is inseparable from a chemical assay, and, while I admit that there is a certain force in the objection that tests made on the lower animals may be very misleading with regard to the potency of a drug in its action on man, I am sure that standardization based upon these tests, in the case of drugs like these which are liable to be wholly worthless, is better than no standardization at all. If the pharmacologic tests are liable to be misleading, so also are many of the chemical tests. In most cases there are present several alkaloids differing widely in activity. An example of this is seen in nux vomica. Heretofore the total content of alkaloid has been taken as a measure of the value of the drug. Conclusions based on such an assay are correct only provided strychnin constitutes a certain fixed percentage of the total alkaloid. In fact, this is approximately true, so that it does not greatly matter whether you state that a given sample of the drug contains 3.2 per cent. of total alkaloid, or that it contains 1.45 per cent. of strychnin, if you remember that about 45 per cent. of the alkaloid is strychnin.

The practical difficulty is in separating accurately strychnin from brucine in the assay process. As yet the problem is not satisfactorily solved, and variations amounting even to 10 per cent. of the whole amount are liable to occur in the determinations of strychnin made by different analysts. As close an approximation as that we might hope to make in assays by pharmacologic tests.

So in the assay of the mydriatic drugs. We know that in these drugs there exist two isometric alkaloids, hyoscyamin and atropin, besides other bases. We have no method of separating these two alkaloids where the total amount present weighs only a few milligrams—rarely as much as half a grain. We do not yet know accurately how these two alkaloids compare with one another qualitatively or quantitatively in activity, although that subject is now under investigation. It seems to me that it may be possible to judge as to the practical value of a sample of such a drug as belladonna almost as closely by testing the effects it produces on the eye as by a chemical assay. This statement will not seem so strange in the mouth of a chemist, when I say that in some test assays of belladonna leaves made recently by a number of experienced analysts using the same assay processes, results were obtained ranging from 0.24 to 0.41 per cent. of alkaloid, one result indeed falling below 0.20. This is, of course, an extreme case, but when so much is claimed for the exactness of chemical determinations, it is only right that such extreme instances should be taken into consideration.

That our pharmacopeia should so define every article of the official materia medica that prescribers can rely upon obtaining substantially uniform results from the remedies they employ, every one will admit, and this means that the principle of standardization should be adopted wherever it is applicable.

Several practical questions will arise, however, that admit of difference of opinion. The first of these concerns crude drugs. Shall we fix for these a definite, absolute standard, so that if a particular sample of the drug is either below or above that standard it must be rejected? Or shall we simply fix a minimum limit of strength, as we have done hitherto in the case of crude opium? The latter course seems to me to be the only practical one. It will be understood that such drugs are not to be administered in substance, but simply to be employed in the preparation of standardized tinctures.

It may seem at first to some that there is no need in that case of having a standard at all. Not so, for it is impracticable to make standard galenical preparations from drugs containing less than a certain proportion of active principle. The preparation would be greatly overloaded with inert matter.

In the case of drugs that are occasionally prescribed in substance, the pharmacopeia should, as in the case of opium again, provide a standardized powder, adjusted accurately to a fixed definite strength. The ordinary retail pharmacist, of course, could not supply such a powder. Only large manufacturers or dealers could afford the necessary expense and labor involved in making such adjustment of strength, which could only be effected by mixing in the requisite proportions drug below with drug above the required strength, or by the use of a suitable diluent such as sugar of milk.

The problem how to compel the retail druggist to furnish only standard powders in filling the physicians' prescriptions is one that immediately presents itself. Unless physicians understand the matter thoroughly and are in earnest in insisting upon the use only of standardized preparations in filling their prescriptions, the pharmacopeia will remain in this particular a dead letter. Do not understand me to say that physicians themselves will have to do the necessary police work to

secure this end. All that they need do is to post themselves to begin with on the requirements of the new pharmacopeia, and then let the druggists know that they *must have* only the standard drugs and preparations of the pharmacopeia dispensed in filling their prescriptions. The enterprise of manufacturing houses that are keenly competing for the druggists' patronage will do the rest, even without recourse to legal enactments. It is apathy on the part of physicians with regard to matters pertaining to pharmacy that generates in the pharmacist apathy with regard to his professional obligations, which include scrupulous adherence to the requirements of the pharmacopeia.

The practical questions which just now vitally interest the physician are those of the actual standards to be fixed in the new pharmacopeia. The settling of these questions we can not afford to leave wholly in the hands of mere pharmacists. We understand better than they do the importance of conservatism with regard to changes in the character of pharmacopeial preparations. We know very well that more than 50 per cent. of the prescribers in our country—I purposely put the figure low—will not know anything about any changes that may be made in the pharmacopeia of 1900. They will write "Tinct. opii" of "Fl. Ext. nucis vom." as they have been in the habit of writing it, assuming, if they know at all that there is a new pharmacopeia, that there has been no material change in the strength of those preparations. Certainly 25 per cent. of the druggists, to put the figure again a low one, will continue to use the official galenical preparations made in accordance with the pharmacopeia of 1890—or 1870 perhaps—either on the assumption that no material change can have been made in the formulas, or else with the certainty that the physicians who prescribe them expect to get what they have always had under the official names in question.

On the other hand, there is a class of pharmacists to whom changes in the pharmacopeial formulas, made with reference to some ideal uniformity from the pharmacist's standpoint, seem a matter of small consequence. From such men comes the recommendation, for example, that all the tinctures of the new pharmacopeia be made in the proportion of one part of the drug in five fluid parts of the product.

How, then, shall we determine the new standards? We of the pharmacopeial revision committee desire to get an authoritative expression on this question from a representative body of physicians, such as this one. My own view is that the aim should be to make the new standardized tincture as nearly as possible identical in activity with the tincture prepared by the present official method from drug of average good quality.

In the case of tinctures, indeed, I incline to favor the plan that has been adopted in the British pharmacopeia, of making the various tinctures of such strength that the ordinary dose would be in each case a certain quantity. The British pharmacopeia makes two classes of tinctures; in one the ordinary full dose is a teaspoonful, in the other it is 15 minims. This seems to me confusing. If there is to be posological uniformity at all, it ought to be absolute uniformity, otherwise mistakes would be even more liable to occur than were there no pretense of uniformity. As a matter of fact, our present tinctures, with very few exceptions, might be included in one class or the other, of those of the British pharmacopeia. My suggestion has been to eliminate altogether the exceptional tinctures, such as those of aconite and veratrum viride, and in some way distinguish in the nomenclature the "potent" from the "normal" tinctures, the latter those having a teaspoonful dose.

Except as slight changes in strength may seem to secure more perfectly uniformity of dose in preparations having the same generic name, my view is that the new standards should aim to leave official preparations as nearly as possible of their present strength.

An important case, and one that demands special consideration, is that of the tincture of opium. The strength of this much used tincture has undergone important changes in the past. Thirty years ago it was made of such strength that thirteen minims (more exactly 13.2) represented one grain of opium, supposed to contain 10 per cent. morphin. In the revision of 1880 the strength of the opium used was raised to 12 to 16 per cent., and one grain of this opium was to be contained in about 11 minims (10 grains) of the tincture. In 1890 the strength of the opium was restricted to 13 to 15 per cent. morphin, and now 10.5 minims of the tincture were to represent one grain of opium.

Soon after the pharmacopeia of 1880 was issued some of the prominent manufacturers adopted as a standard for tincture of opium, six grains of morphin (hydrated) to the fluid ounce, which was about the average according to official requirements. The same standard continued to be used by manufacturers under the pharmacopeia of 1890, although very near the minimum requirement. For twenty years, therefore, the tincture of opium has been maintained by the influential manufacturing houses at a uniform fixed standard, and a very large part of the tincture now used in this country is thus standardized.

It is now proposed in the coming revision of the pharmacopeia to make the standard for powdered opium 14 to 14.5 per cent. hydrated morphin and maintain at the same time the ratio of 1 to 10 between powdered opium and the tincture. This means an increase in the strength of tincture of opium amounting to from 5 to 10 per cent. Is this advisable or even justifiable?

Consider in the first place the fact that our tincture of opium is already much stronger than the corresponding preparations of the British or the German pharmacopeias. If any change at all were to be made, it seems to me that it should be in the opposite direction. The present standard of 1.325 per cent. of morphin, or 7½ grains morphin sulphate (equivalent) to the fluid ounce, is certainly not a convenient one. An increase in strength such as that proposed would enable us to set the standard at the very convenient figure of 8 grains morphin sulphate (equivalent) to the fluid ounce, or one grain to the fluidram. This certainly would facilitate calculations, and possibly this consideration in the minds of some would outweigh the objection that it involves a change of about 6 per cent. in the strength of one of the most important of our medicaments.

Personally, I favor retention for the present at least of the standard to which we have become accustomed, since it is so widely accepted by manufacturing pharmacists. If a change is thought admissible, it should certainly be, as I have already said, in the direction of bringing our pharmacopeia more nearly in accord with those of other countries. A change even in this direction of as much as 10 per cent. in the strength, I do not think would be advisable. It would require fully as great a change as this to meet the German pharmacopeia half way. The discrepancy between our tincture and that used by our neighbors on the north is so great that compromise is quite out of the question. A return to the standard in use previous to 1880 would put us fairly

in harmony with them, but such a change can hardly be advised. It is not greater, indeed, than that made in the revision of 1880, but at that time exact standards had not come into general use.

If we reduce the strength of the tincture from 1.325 to 1.25* per cent. morphin, it is perhaps all that we can do at present towards bringing our pharmacopeia into agreement with those of other countries. One fluid ounce of the tincture, in that case, would contain the equivalent of very nearly 7 grains of morphin sulphate, 8.4 minims, instead of 8 minims as at present, containing ⅛ grain of the morphin salt.

The following table shows the comparative strength of the tinctures in question:

| | Grains opium to fl. oz. | Per cent. morphin (hydrated) in opium. | Grains morphin to fl. oz. | Grains morphin sulphate to fl. oz. | Number of minims = ⅛ gr. morphin sulphate. |
|---|---|---|---|---|---|
| U. S. P., 1870 | 37 5 | 10+ | 3.75+ | 4 69+ | 12 9— |
| U. S. P., 1880 | 43 6+ | 12 to 16 | 5.23 to 6 97 | 6.54 to 8.72 | 9.2 to 6.9 |
| U. S. P., 1890 | 45.56 | 13 to 15 | 5.92 to 6.83 | 7.40 to 8.54 | 8.1 to 7.0 |
| Proposed 1900 | 45.56 | 14 to 14.5 | 6.38 to 6.61 | 7.97 to 8.26 | 7.5 to 7 3 |
| Present standard | . . . | . . . . . | 6.00 | 7 50 | 8 0 |
| Brit. P., 1898 | 34 2+ | 10 6+ | 3 63+ | 4.53+ | 13 2 – |
| German P., 1890 | 44.0± | 10 6+ | 4.66+ | 5 83+ | 10.3 – |
| Author's suggesti'n | . . . . | . . . . . | 5.69 | 7.11 | 8 4 |
| Alternative | . . . . | . . . . . | 6.40 | 8.00 | 7.5 |

I have said enough to indicate the nature of the problems which are engaging the attention of the revision committee, and I hope that I have brought home to you as physicians your individual and collective responsibility in relation to the solution of these problems. If I have in any measure succeeded in this, the object of this paper has been accomplished.

DISCUSSION.

PROF. C. S. N. HALLBERG, Chicago, said that standardization of crude drugs, if not the burning question, is at least one of those now before the Committee on Revision of the Pharmacopeia. Until the seventh decennial revision, that is to say previous to the revision of 1890, there was no normal standard fixed for any drug, except for opium, for which there was a minimum of 10 per cent. of morphin established. The Pharmacopeia of 1890 required that dry powdered opium should not contain less than 12 nor more than 16 per cent. of morphin; rather a wide range when its therapeutic applications are considered. In the decennium of 1880-90, there had been a great deal of work performed, especially by Dr. Lyons and others, upon alkaloidal assays, and it was thought that the principle of fixation of alkaloidal strength of drugs would be quite largely applied in the revision of 1890. But it was found, by the time the Convention assembled in Washington, that the progress that had been made had not been so great as to warrant the application of this principle to more than three drugs, opium, cinchona and nux vomica, and to the preparations of opium and nux vomica, but not to the preparations of cinchona. Since then, the work has gone on apace, especially among the Germans, but also in this country. In laboratories of Philadelphia, and the University of Michigan at Ann Arbor, particularly, processes have been formulated which would be applicable to drugs for analysis; but whether these processes can be extended to every drug and alkaloid, or active principle of glucosidal character, is another question. He was inclined to believe that as long as studies in the constitution of drugs are still incomplete (the active principle of aconite, for example, has not been accurately determined at the present time, and digitalis and other drugs of like character are still unsettled as to the character or identity of their active constituents), it would be a pretty difficult problem to attempt to fix any definite value to these drugs in the Pharmacopeia. He did not, therefore, believe that this principle of standardization could be extended to many more drugs than has already been done, or carried out except in a very limited way. He believed that physicians should have some guarantee that the preparations they are using, such as digitalis and ergot, should have at least the minimum of what has been determined to be the active principle. It is due to physicians that this much of the principle of standardization should be preserved; but to lay down definitely the exact proportion of the principal constituents of each drug is a little too much to require. We have not yet reached the stage when that can be done with safety. There are so many men on the Revision Committee who understand the needs of the profession in this respect, that the speaker had no doubt that it will be carefully considered and the principle applied as far as compatible with safety.

F. J. WULLING, Minneapolis, Chairman of Delegates from the American Pharmaceutical Association, expressed his hearty concurrence with what had been stated in the paper and by the preceding speaker. He believed that a representative body like this Section could exert much influence in bringing about a condition of affairs so desirable as the standardization of the crude drugs and preparations of the Pharmacopeia. Druggists have knowledge of the different varieties and varying qualities of drugs in the market, and with the exception of what has been done by the Pharmacopeia, they have no methods of determining the value of these drugs. At the present time, there is no sure way for the physician to determine the value of the drug or preparation which he orders, that is to say, of determining the active constituents, and their proportion so as to base his dosage upon that fact. The speaker agreed with Prof. Hallberg that we have no process of analysis, at present, to determine the active principle of digitalis; unfortunately as soon as one is formulated, someone else immediately shows that it is unreliable and that it varies in its results. While there are many difficulties in the way, still he felt that progress has been made in applying the principle of standardization; and he hoped to see it extended further. For example, he had recently had a specimen of belladonna shown to him, which appeared to be a first-class specimen of the drug. He used it to make a tincture, and found upon dispensing it that physicians reported that they could get no therapeutic effect from it. He tested it upon a dog and obtained no result at all. Further investigation proved that the drug was inert; it contained no atropin. It was a handsome specimen in appearance, but it contained absolutely no active principle. At the present day, the druggist must depend largely upon the physical appearance of drugs unless the tests are given in the Pharmacopeia. The careful pharmacist tests every tincture to see what effect it has and to satisfy himself that there is some virtue in the drugs, not in a very scientific way perhaps, but still it does test their value. We have at present some methods of standardizing crude drugs, and the speaker believed it advisable to adopt these processes in the next revision, and make others as they arise. We can not do all that we desire at once, but we can make a beginning. Dr. Lyons had stated his belief that the ordinary druggist does not have the appliances for carrying out the processes recommended by the Pharmacopeia. The speaker believed that, from personal observation, he would be safe in saying that about 10 per cent. of the pharmacists have the proper appliances to make such analyses, according to the processes recommended in the Pharmacopeia; and he thought that the other 90 per cent. would do well to supply themselves from prominent houses that make standardized preparations. But it does not rest entirely with the pharmacists. Physicians should interest themselves in this subject far more than they do. They should acquaint themselves with the requirements of the Pharmacopeia and insist upon having official preparations. If they do insist, the druggists will only be too glad to supply them. We know that physicians of late years have not confined themselves to the official preparations, but prescribe a number of commercial preparations not in the Pharmacopeia. Possibly, this may be largely due to the greater convenience of ready-made pharmaceuticals. Some years ago, he had taken occasion to interview a number of physicians to solicit their

* 1.25 grams in 100 c.c. of the tincture.

support for the "National Formulary" and he was quite successful in obtaining their help. Physicians told him that they wished their drugs to be reliable, and if they specified the manufacturer, it was in order to obtain a good article; if they felt assured that they could always get a reliable tincture or fluid extract, they would prescribe them in preference to the proprietary preparations. Attention of physicians should be drawn to the "National Formulary" of the American Pharmaceutical Association, because it contains formulas especially prepared to relieve physicians of the necessity of prescribing secret proprietary preparations which are not compatible with the dignity of physicians and which they prefer not to use. Some physicians hesitate about writing extemporaneous prescriptions on account of incompatibility and of making unpleasant combinations. They find it more convenient to order pills already made, and save themselves trouble. The speaker urged that the members of the Section use their influence to have the medical colleges of this country introduce the Pharmacopeia as a text-book. As it is, many physicians have never seen a copy of the Pharmacopeia and do not know it from the Dispensatory. He thought that most of our colleges pay very little attention to pharmacy, which is a great mistake. If practical pharmacy and materia medica were made more prominent in the curriculum of the medical colleges, he thought that the new graduate would be better qualified to practice his profession. He had met physicians who had never seen iodid of potassium! One physician told him that he did not know whether paregoric contained any opium or not! Where there is power, as there is in this Association, if it be used judiciously, much can be accomplished. With regard to standardization, he thought that it should be accomplished as far as possible at once or without unnecessary delay.

DR. A. M. WILSON, Kansas City, said that some years ago a class of men about to graduate from a medical school, about fifty in number, came to him for private instruction, and he found that not one of them could tell the difference between a tincture and a fluid extract. Although not practicing pharmacy for several years, he still has a private laboratory and is much interested as a graduate in pharmacy in the subject under discussion. We all know that a prescription, say for tincture of belladonna, taken to a half dozen different druggists would very probably bring back a different preparation from each one. He was, therefore, in favor of standardization. He advocated a better understanding between physicians and druggists, and thought that it would be better if the medical graduate could be made more of a druggist than he is at present. While the foundation of medicine is diagnosis and pathology, the superstructure is pharmacology and therapeutics. The text-books, however, are devoted almost entirely to pathology and say very little about the administration of drugs. He was certain that no satisfactory understanding can be reached until the physician knows as much as the druggist. At present, the Pharmacopeia is a sealed book to the physician and the average student coming out from a medical school is not competent to prescribe drugs, and therefore may easily be led off into Eddyism or other vagary. Out of a class of 122. that went out from a Kansas City medical school, there was only a very few who knew anything about the Pharmacopeia or the preparation of drugs. We should realize the tremendous responsibility of this subject and endeavor to have pharmacology more thoroughly taught. He believed in the use of standard drugs upon the standard human being, and he hoped that the effort to secure uniformity would succeed for the happiness of posterity and reputation of the medical profession.

DR. W. L. DICKERSON, St. Louis, Mo., said that with reference to the criticism that medical students go out without any knowledge of materia medica, he thought that it could not be any different under the present arrangement of studies. The student taking a four-years' course is expected to complete his studies of materia medica and pharmacy in the first year. He said that it would be better if these studies were made continuous throughout the four-years' course. He was glad that the revision of the Pharmacopeia was in the hands of authorities who are giving due attention to the subject of standardization. The strength and dosage of tinctures are very variable and he thought that there could be no uniformity as long as the strength of tinctures varied all the way from 5 to 35 per cent.

DR. N. S. DAVIS, JR. (Chairman), said that he had for a number of years given much thought to the subject and he approved of the adoption of standardization of drugs and preparations just as soon and as far as possible. At present, however, the field in which it can be done with safety is very restricted. As a member of the Revision Committee, he had endeavored to carry out one plan, which he had always desired, and that was to make the Pharmacopeia more useful to medical men. He thought that physicians should be interested in it just as much as druggists are; it is the common standard for the two professions. It has not, hitherto, been arranged for physicians, but for druggists, and is not especially interesting to medical men, although it might be made a useful work in reference for both. With regard to instruction in medical schools, medical students in their first year acquire a certain amount of information with regard to materia medica and pharmacy, just as they do of physiology, information which they afterwards make use of during the remainder of their course at college. It can not be said with propriety that these studies are discontinued at the end of the first year, because they constantly make use of them throughout the entire four-years' course. He thought it very necessary in order to obtain definite results from drugs, to use products which are standardized, in preference to allowing the prescriptions to be filled with unreliable preparations which would not yield uniform results. Returning to the Pharmacopeia, he said that, in his opinion, all the new remedies should be placed therein, in order that physicians might be able to consult the Pharmacopeia for the latest authoritative information about drugs. It should not be a volume of standards, nor attempt to say with authority what drugs should be used, but a reference book. It should, therefore, contain all the newer drugs, whether they had been tested or not; these possibly might be put in an appendix, but all the new ones as well as the older preparations should be contained in it; the latter because they are still used by some physicians. As regards teaching of materia medica in the leading medical schools at the present time, laboratory courses are given in pharmacy, where the students are made familiar with the appearance of crude drugs, their chemical tests, and how to make the preparations. This course is supplemented by one on the physiologic effects of drugs. As students so taught come out and enter the profession, he felt sure that they will be far better informed as to the effects of drugs than those who graduated some years ago, of the class to which the last speaker had referred. It can not be said that these subjects do not receive sufficient consideration in our principal medical schools.

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## THE PROPER MANAGEMENT OF THE TUBERCULOUS LUNG.*

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How to manage a lung infected with tuberculosis so as to give it the best possible chance of recovery is a great desideratum, and only second in importance to the general management of the system as a whole.

A better understanding of the normal process of recovery of tuberculosis and of diseased lung tissue in general, makes it necessary for us to revise our notions of the proper hygiene and management of the tuberculous lung. It is necessary that we should recast our theories of cure and change our procedures with the lungs themselves. We must learn new ways, or rather

* Read at the Fifty-second Annual Meeting of the American Medical Association, in the Section on Materia Medica, Pharmacy and Therapeutics, and approved for publication by the Executive Committee. Drs. Thomas Hunt Stucky, Leon L. Solomon and N. S. Davis, Jr.

the ways of Nature, as shown by wide observation of disease in other parts of the body and by experience with sick lungs themselves; and we need to reject and relegate to the rubbish pile a lot of doctrines that have been held and followed with the faithfulness of devotees by the public and profession alike. Some of these doctrines originated in the theories of non-professional persons with a superficial knowledge of physiology, and grew out of their reasoning as to what ought to be the truth, and therefore ought to be the procedure. It is an interesting as well as a pathetic fact that the profession has in the past fallen so readily and innocently into the habit of believing and following the theories of the lay public. It is likewise pathetic that we of the profession are wont to continue to rock along in the old ways for decades without stopping to consider whether better ways are possible. Some things by the light of this day must become axioms.

1. Shallow breathing is important and beneficial for a tuberculous lung that has to breathe. Better than that is no breathing. The good rule to put a sick organ at rest finds no exception here. Quiescence gives the forces of Nature the best chance. Put the sick lung part to rest if possible. The effects on the tuberculous lung of serum or gas in the pleural cavity in compressing the organ and so putting it to rest, have almost invariably been good, and they have gone far toward a demonstration of this proposition.

2. Deep breathing, or an occasional deep breath, is often urged as a measure to expand the lungs, which is a thing that has been supposed to be useful in tuberculosis, as well as to favor expectoration. The exit of the products of the disease is vital to prevent the occurrence of fever, and fever or the poison that causes it or both are what, if they last long enough, wear out the life of the patient. Many of us have been, I am convinced, guilty of giving this advice too freely, even recklessly and without pondering the effects of the measure. If it is so vital that phlegm within the tubes shall be expelled promptly a better way is to teach the patient to cough at the end of an expiration, when half the effort will accomplish the purpose; for this maneuver partially collapses or narrows the bronchi (and cavities if there are any) so that phlegm masses are more easily caught by air currents; and makes it possible for a small amount of air on the distal side of such a mass to expel it with great ease, when moving outward and into larger tubes with only a moderate degree of air pressure.

But are we sure pus within the bronchi is so very harmful? Fever is probably produced much less by absorption from within the bronchi than many of us have been ready to think. There is strong reason to believe that highly poisonous phlegm may remain inside the tubes for a long time without doing much harm. The real seat of mischievous absorption is, probably, mostly infected areas outside the walls of the tubes or the substance of the tube walls themselves. The patient suppresses his cough because cough appears to his mind synonymous with sickness; so if he can by any trick resist it he is in his estimation getting well. The doctor is likely to blame him for retaining his phlegm lest its poison shall be absorbed and produce fever; but it is almost certain that the benefit done to his lung by the quiescence of the organ due to suppression of the cough, a great deal more than counterbalances any injury done by absorption from within the bronchi.

3. Quiescence of the lung favors the limitation of the disease by fibrosis around and within the part involved, with the smallest amount of fibrous tissue; and the smallest amount that can be effective is always desirable. Deep breathing does violence to the fresh, new fibrous tissue and so probably stimulates the further and excessive growth of it, exactly as manipulation of an open sore tends to an increase of scar tissue. Sometimes a patient recovers or is in a fair way to recover from his tuberculosis, to die from the damage due to excessive fibrosis. For, while moderate fibrosis is a conservative process, excess of it may be dangerous by cutting off the blood supply of the parts and so leading to destructive ulceration of lung tissue, dyspnea, debility and death.

4. There is no particular need of or significance in the popular efforts in the real or supposed expansion of the chest by deep breathing and wide movements of the arms. These measures may do well enough for the healthy who fear they may get sick, but never for the victims of pulmonary tuberculosis; and no arm movements or raising or retracting of the shoulders can ever expand a chest anyway, since the shoulders glide over muscular masses around the cone of the chest without changing its diameter or its position. That they can so act is a layman's theory, founded in poor knowledge of anatomy.

5. Altitudes do not help the sick with lung tuberculosis by expanding to a greater degree the air vesicles. The theory is fallacious, unphysiologic and wrong. The benefits of altitude must be explained on the theory of the increased number of the red blood corpuscles even if they are reduced in size, and of attendant and other advantages to the general nutrition of the body. These advantages are not discounted when we try to explain them on the rational ground of known physiologic changes, instead of on supposititious grounds which are founded in error.

6. Breathing through diminutive contrivances of tubes with large inlet and smaller outlet so as to produce increased pressure within the chest to expand the air vesicles, is harmful if any effect at all is produced. At best it only does the thing that every act of coughing produces, and produces with less harm than the steady, long continued pressure in the sustained effort at blowing, that so many people have practiced.

7. The habit of public speaking is distinctly harmful in consumption, doubtless because it increases the motion of the lungs and increases the pressure within them. It has been the practice of many of their physicians to permit clergymen with mild tuberculosis to continue preaching. I am satisfied that it is wrong and that the rule should be with every such patient to stop all public speaking, until at least a year after recovery is complete.

8. Every act of coughing must *ipso facto* increase the pulmonary air pressure and so tend to stretch the air vesicles and disturb the new and soft fibrous tissue and favor absorption into the veins and lymphatics of the lung. So cough should be minified as far as is consistent with free expectoration of the accumulated phlegm, and coughing efforts should be made with as little pressure as possible. Let a patient cough at the end of a profound expiration and he will discover that he can raise his phlegm with a quarter of the air pressure that he would use if he coughed at the end of a deep inspiration, with every bronchus and cavity stretched to its utmost. There is much cough that is useless since it fails to bring up any phlegm whatever. It is a blind automatic effort of the sensitive nerves of the irritated mucous membrane, provoked by some irritation beside that of phlegm that can be expelled. As this tends to injure the air vesicles and increase fibrosis we should en-

deavor to lessen it as far as possible by means not of anodynes administered internally, but perhaps by soothing inhalants, warm clothing and careful attention to the needs of the system as a whole. Anodynes may become necessary occasionally as the lesser of the two evils.

9. Posture of the diseased part is usually forgotten as a factor in either the diagnosis or management of tuberculosis. That in one-sided tuberculosis, cough and wheezing are increased by lying recumbent on one side, and are decreased by reversing the posture, is a valuable aid in diagnosis, and points almost unerringly, if it is early in the progress of the case, to disease on the side that is undermost when the symptoms are excessive. This is due to the influence of gravity on the phlegm. When the substance can flow downward into larger tubes or into the windpipe, râles decrease and there is less tendency to cough. When the flow is distally toward and into tubes decreasing in size râles increase, and cough is produced by contact with healthy bronchial surfaces. Except in the rarest cases, it is only when the disease extends to the very surface of the lung that this symptom is wholly absent.

To keep the sick part uppermost favors the outflow and exit of disease products and so is useful for the part itself. To lie on the well lung therefore lessens useless cough and so far keeps the sick lung quiescent and gives it better opportunity for recovery. But on the other hand it favors the flow into the undermost and well lung, by gravity and suction together, of pus and other fluids, sometimes to the extent of carrying the disease to normal tissues; and this is the greatest misfortune of all. How much any hypostatic congestion of the well lung in this posture may handicap it and predispose its tissues to acquire tuberculosis must be a matter of conjecture, but there can be no question that to keep an uninfected lung in safety is a paramount duty.

It is a common observation that tuberculosis begins in the right apex, and as it recovers there breaks out in the bronchi of the left side, not at the very apex as was the case on the right side, but in the region of the second interspace and where it might be expected to appear if it should be an infection conveyed through the left main bronchus. By reason of the angle of this bronchus with the trachea the erect posture of the body favors the return of phlegm into the left rather than the right side, and this fact may well account for most of the cases of spread of the disease to the left lung in the region named and under the circumstances described. But it is only fair to assume that some of these cases are due to lying on the left side to avoid the coughing and wheezing threatened by a diseased right lung. And it is a serious question how far the patient should indulge himself in posture to escape the discomfort of coughing, when he is thereby in danger of an extension of the disease. I am coming to doubt whether in cases of much phlegm it would not be better to lie on the diseased side most of the time while in bed, turning to the opposite side occasionally to assist in coughing out the phlegm, than to pursue the usual course of keeping the sick side uppermost. It is true that such a procedure favors the flow of fluids distally and into perhaps uninfected small bronchi, but the quiet respiration of sleep would hardly do this, while it might suck phlegm into the large bronchi of the opposite side. Then the uppermost lung in lateral decubitus probably always expands more and does more breathing than the other one, and this is an unfortunate proportion; the major work ought to be done by the well lung.

10. There is now no reason to doubt the great value of immobilization of the diseased lung, especially in those cases where (the lesion being unilateral) one healthy lung remains capable of taking on extra duty. This doctrine has greater force and value in tuberculosis than any other disease.

Gas inflation of the pleural cavity, according to the method of Murphy, is undoubtedly the best way to accomplish this purpose where it can be done. But it is often inapplicable by reason of extensive adhesions preventing the distension of the cavity; by reason of lack of the proper apparatus; of lack of experience or skill on the part of the physician; or of courage on the part of the patient or his friends. It is chiefly adapted to the incipient stage of the disease and before adhesions have taken place; and adhesions develop as a rule rather early in pulmonary tuberculosis. At the same time many of the patients that show most benefit from fixation of the diseased lung, and that most need it, are more advanced cases, that are even more deserving of consideration, if less promising for recovery. External fixation ought to come into vogue for these patients, for it may be applied to nearly all unilateral cases in all stages of the disease, and has the merit of relative harmlessness, ease of application and general adaptability. From it patients often experience great benefit even from the moment of its application.

11. The method consists in fixing the diseased side as far as possible by means of numerous strips of firm adhesive plaster or some other apparatus, as a plaster of Paris splint or one made of some other material. In using the plaster the strips are drawn tightly about the side, ending somewhat beyond the median line of the body and are spread out in divergent lines extending from below the axilla, where they are gathered to avoid discomfort to the patient. Thus applied they do not interfere with the free movement of the well side, while they exercise a firm pressure on the side to be stilled. By this measure the ribs of the side may be considerably restricted in their excursions in respiration, and the lung beneath be likewise restricted in action. The reduction in the lung motion is, of course, less than that of the ribs, since the mediastinum constitutes a partition between the two sides of the chest that is movable to quite a degree by reason of its elasticity, and will always allow the lung we attempt to confine to expand in a measure, by itself stretching over toward the side of greater motion. But the partition, with the weight of the heart and great vessels, exercises some physical force against lateral movements, and that, such as it is, helps the efforts toward fixation of the lung.

Even if one side of the chest wall and the mediastinum were fixed and immovable, still wide excursions of the diaphragm could easily neutralize to a large extent the effects of this condition and allow all parts of the lung, except the very apex, to expand rather freely. The motion thus produced would be greatest at the base of the lung and shade off toward the apex where it would be slight.

The movements of the diaphragm may be minified by voluntarily breathing exclusively with the chest movements. It is possible for one to create a habit of doing this, but the average patient probably never will accomplish it, for he has too little fortitude and continuity in mental attention for so severe a test. And even if it were possible we could not expect the habit to be carried into the hours of slumber, which are quite as important as any other part of the day. But it is unwise and unfair to tax a consumptive with the duty of watching the

manner of his breathing. To be quiet and protect others from his expectoration is about all we ought to ask him to do.

The diaphragm may be to a very large degree immobilized by pinning a firm bandage around the abdomen, and thus abolishing as far as possible abdominal breathing. The bandage should be made of stout and inelastic cloth; should reach from the epigastrium to the pubic bone and extend over the lower ribs above, and the pelvis to near the hip-joints below. It should be drawn as snug as the patient can bear with comfort, and be fastened with safety pins placed not over an inch apart. To prevent it from sliding up and gathering about the waist the ordinary perineal thigh straps may be used.

The strips for the chest wall should be a good article of rubber adhesive plaster, or some other adhesive material, two inches wide. They should be drawn firmly and applied with the chest erect and in the state of extreme expiration; they should be numerous enough to cover the whole side, should overlap freely, and be sure to extend some three or four inches beyond the median line both front and back.

In applying the strips it is important to avoid placing them so that they will cut under the arm. If the arm is in the position of extreme elevation when the uppermost horizontal strip is applied it will almost certainly be placed too high and hurt the skin when the arm is brought down and carried in that position. The best way to apply this one, as for that matter all of them, is with the arm hanging by the side, the plaster being first carried under the arm and applied to the axillary line at the proper height, after which the ends may be stretched into place with the patient in full expiration. Then a number of strips should be applied diagonally in such a way as to avoid the axillary region. The strip that begins over the epigastrium ends at the inner end of the spine of the scapula on the well side; and the one that begins at the upper point of the sternum ends below the scapula of the well side. Thus the strips in the upper part spread out like a fan both front and back, while the lower ones are nearly or quite horizontal. The best rule as to the sequence of application of the strips is to fix the lowest horizontal one first, then the next above and so on, the diagonal ones at the top coming last. The patient should expire freely as the ends of each strip are drawn to place. Finally two strips of plaster superimposed should be drawn firmly over the shoulder, between the acromion and the neck, and extend down front and back lower than the horizontal strips and pressed firmly against all of these. These pieces tend to fix the upper ribs and give comfort to the chest. It is better not to have them stick to the shoulder. This may be prevented by first placing over the latter two layers of soft cloth extending to the diagonal strips of plaster. When well and fully applied the side of the chest is almost completely covered by the plaster.

The plaster dressing should, when once well applied, be allowed to remain unmolested as long as it serves the purpose of fixing the chest wall, or until it becomes annoying to the patient by producing some irritation of the skin. Then it may be taken off and the skin be washed with alcohol or dusted freely with bismuth, or some skin dusting powder, to remove any particles of plaster, when, if conditions are favorable, it should be reapplied as before. This round of measures should be repeated as many times successively as the case requires.

The skin is sometimes irritated considerably by the plaster, and pimples and slight excoriations occur. But these usually recover in a day or two when the plaster is removed; then it can be reapplied. The skin irritation is useful to the lung and intercostal tissues rather than otherwise; moreover, the skin often seems to become after a while toughened or accustomed to the plaster, so that this ceases to irritate.

The greatest difficulty is in the tendency of the plaster to creep or slide, and as soon as it becomes so slack as to cease to keep the chest considerably immobilized it should be removed at once, and be reapplied as soon as possible. A surgical appliance much needed is a plaster that is highly adhesive and that once applied will not creep at all; but perhaps these conditions are impossible.

An interesting effect of the strapping, discoverable after it has been maintained for many days, is a restriction of motion in the affected side after the adhesive strips are removed. By idleness the respiratory muscles of this side acquire the habit of rest; and by increased duty those of the opposite side take on a habit of larger activity.

The abdominal bandage does no harm in any way except by depriving the abdominal organs of their accustomed gentle and natural massage due to the habitual movements of them that are produced by abdominal breathing. But this lack can easily be compensated for by removing the bandage occasionally and freely manipulating the abdomen. The bandage does not need to be so tight as to interfere with the circulation or press downward harmfully the pelvic organs, as tight lacing so often does. The purpose is solely to stop abdominal breathing as far as possible or as far as is consistent with good digestion and elimination; and abdominal breathing may usually be almost or quite abolished without interfering seriously with these functions.

The effect of this measure for immobilization of the chest will be found, in many cases, to be highly beneficial; in some cases the instant comfort experienced by the patient is a striking feature even where no chest pains have existed previously. The comfort comes from a quieting of the noises in the chest and from a feeling of rest. In substantially no case is it harmful, provided there is one healthy lung to be used; and it is borne without special discomfort by a large proportion of patients. A catalogue of the good effects includes: 1, considerable relief from useless cough; 2, increased ease in expectorating; 3, relief from the annoyance of râles and wheezings, which tantalize some patients into desperate insomnia if not into the grave; 4, relief of pain in the chest walls; 5, relief from a sense of fatigue in the chest which so many patients have; 6, lessening of fever, and consequently improvement in general nutrition and tone; 7, lessening of danger of hemorrhage and assistance in recovery from its effects; 8, aid in the healing of cavities, especially small ones; 9, decrease in the amount of fibrosis beyond what is necessary for a conservative force. There can be no question that immobilization in this way is a sustained benefit to the process of recovery; and I do not know of any other harmless measure that gives so much comfort to the average patient, except the inflation of the pleural cavity with gas.

But these good effects in tuberculosis do not comprise all the advantages that are sure to accrue from the faithful use of this measure. It has been used for the pains of pleuritis for many years; it is just as proper for intercostal neuralgia and for pleurodynia, as for any other pain in the chest that is produced by the motion of respiration. It may be used with benefit for empyema after drainage has been established; it will help toward the collapse of the cavity and early healing with a minimum

of fibrous tissue, and thus with more final use of the lung. It ought also in such cases to lessen the danger of amyloid degeneration of important organs from prolonged suppuration. It ought to be tried faithfully in bronchiectasis confined to one lung, in the hope of lessening the amount of fibrous tissue produced by the disease and so making the havoc to the lung and general system less.

## THE NATURE AND HISTO-PATHOLOGY OF THE EPIPHARYNGEAL TONSIL.

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The body which is known as the third, pharyngeal, or better, epipharyngeal tonsil, and when hyperplastic, as adenoids, is situated at the superior part of the posterior wall of the epipharyngeal space, and constitutes the upper portion of Waldeyer's ring, the median and lower portions of which are completed respectively by the faucial and lingual tonsils, the whole being connected by a system of delicate lymphatic vessels and nodes.

While the honor of first disclosing the local and remote significance of adenoids belongs to Wilhelm Meyer, first in 1868, then in 1873, their existence can hardly be said to have been altogether unknown to the ancient writers. Although he was ignorant of the real cause, Hippocrates, in the 7th Book of Epidemics, gives the clinical picture of adenoids with the concomitant ear discharge, headache, irregularity of the teeth, V-shaped palate, etc. We may gather from Celsus that the effects of adenoids were not unknown to him. Pliny mentions them. Semon draws attention to a picture of a Prince of Spain painted in 1524, in which the artist has portrayed the facies peculiar to those affected with mouth breathing. Schneider (1655), Santorini (1724), Haller (1764), Lacauchie (1853), and Luschka (1868) more or less perfectly described the morphology of the epipharyngeal body, and it was the latter investigator who first conferred on it the name, since generally accepted, the tonsilla pharyngea. Henle, Koelliker and His were the first to examine its histological structure, and to show the histological similarity existing between this and other remote lymphoid structures, namely, the spleen, the thymus, lymph glands, solitary follicles and Peyer's patches in the intestinal walls. Henle called it conglobular; Koelliker, cytogenous; His, lymphoid tissue. Woake's idea as to adenoids being of a papillomatous nature has long since been proven erroneous. Indeed, this adenoid tissue is widely distributed throughout the body. It is abundant in the pharynx; in the esophagus it is almost absent, and in the stomach inconstant; but it abounds in the intestinal canal, especially in the ileo-cecal region, while in the rectum and about the anus it again becomes scant or altogether absent. It is found in the conjunctiva, in the tear ducts and in the mucosa of the female genitals. The trachea is rather free from the adenoid structure; but in the larynx it is constant, and is most frequently abundant in the ventricles and the interarytenoid region, on the free edge of the epiglottis, on the petiolus, in the aryepiglottic folds and in the sinus pyriformis.

Knowledge of the distribution of adenoid tissue in the postnasal space and adjacent structures is of practical import, inasmuch as the whole or any part of it is liable to undergo hyperplastic change.

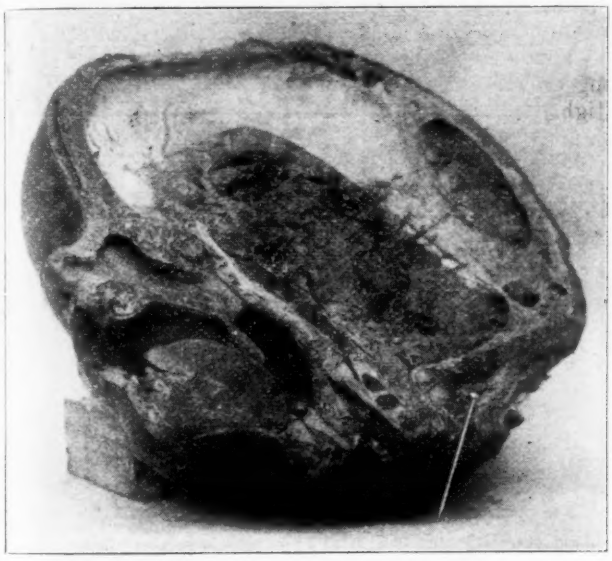

**Figure 1.**
Showing size and position of a normal epipharyngeal tonsil.

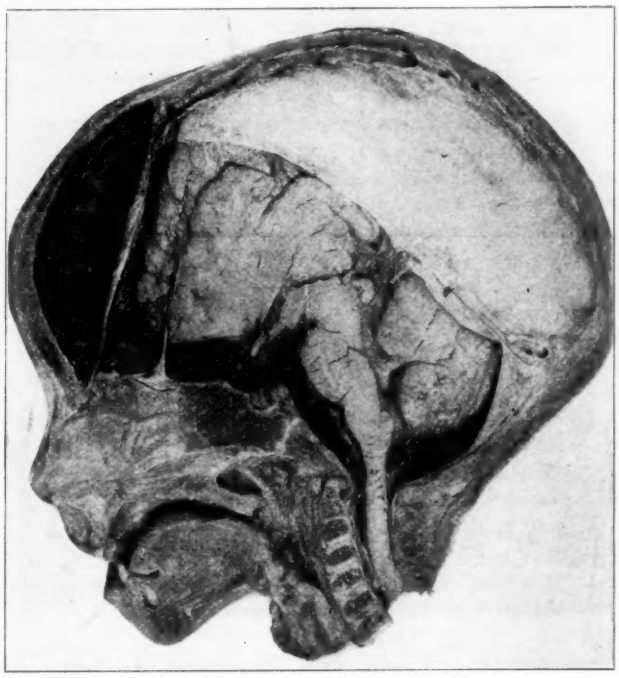

**Figure 2.**
Showing adenoid tissue embracing Rosenmüller's Groove.

The normal pharyngeal tonsil may be said to occupy the space reaching laterally from one Eustachian cushion to the other, and from the superior margin of the choanæ above, to the arcus atlantis below. It is flat and traversed by three to five or more vertical grooves, which tend to converge at its lower end; several fissures are usually found running from side to side, intersecting the former. It measures from 4 to 6 mm. in thickness. From here the adenoid tissue reaches over the soft palate into the middle meatus of the nose and along the floor, where it may be often detected by anterior rhinoscopy as a linear projection of pale pink color (Shäffer, Winckler, Hellman). The accumulation is so great on the median walls of the postnasal space and at the ostium of the Eustachian tube that Teutleben suggests that it be called the tubal tonsil. It enters the walls of the tube itself as far as its upper third. Trautman contended that adenoid vegetations never have their origin in Rosenmueller's groove in the im-

mediate neighborhood of the tubal ostium, while B. Fränkel, Shäffer and others have contended that such origin is frequently found. Reference to Fig. 2 shows growth growing directly from the aforesaid region.

Embryologically the pharyngeal contents are associated by means of Landzert's canal with the pituitary body and pineal gland. But as far as I have been able to ascertain the exact relationship of the tonsilla with the hypophysis is not known. According to Stohr the metamorphosis of leucocytes into the fibrillar structure of adenoid tissue begins in the third month of fetal life. In the sixth month the pharyngeal tonsil is formed. At birth, however, a pharyngeal tonsil is very rudimentary, scarcely visible to the naked eye in most cases. Only exceptionally do we find its hyperplastic enlargement beginning before the end of the first year. In the majority of children from the 5th year to puberty the accretion is at its height. From this time on, its tendency is toward involution. In individual instances we have the most varied exceptions to the rule. Thus we may have large masses of adenoids remaining after puberty and into adult life, or we may see voluminous masses undergoing rapid spontaneous disappearance at any age

Figure 3.
Showing ripening of embryonal into adult connective tissue in an epipharyngeal tonsil removed from a lad at puberty.

before puberty. We must remember, however, that it does not require large masses of adenoid tissue in infants to greatly interfere with nasal respiration.

The size, shape, color, and consistency of the hyperplastic pharyngeal tonsil vary greatly. Its size may cause it to completely or incompletely fill the postnasal space. Meyer divided them as to shape into folious, conical, pectinate and lemelliform varieties. The archtypal form is that with a broad base, sharply defined, of rather hard consistency, hemispherical in shape and with more or less deep sagittal and transverse furrows crossing its surface. The other varieties may be regarded as the result of modification in corrugation due to anomalies in the normal sagittal and transverse furrows. The color may be pale pink, red or purple. Density varies according to the relative amount of lymphoid and connective tissue a growth may contain, and to a certain extent with its vascularity. The surface may be coarsely granular or smooth. There is little doubt but that they possess a certain degree of erectility.

This peculiar arrangement of the pharyngeal lymphatic system is not limited to man. It has been found widely distributed through the animal kingdom by Schmidt, Killian and Holl. It is constant in mammalia, with the exception of rodents, where it is very scant or altogether absent. In swine lymphatic tissue in the pharynx is especially abundant. A lymphatic body analogous to the faucial tonsil as it occurs in man is to be found in birds and in certain reptiles and amphibians.

As to the function of the pharyngeal tonsil little or nothing is known, as little as is known of the part played by the faucial tonsil. Numerous hypotheses have been advanced regarding both, but as yet none of them have been proven. Harrison Allen, reasoning from their embryological connection with the hypophysis cerebri, believed that adenoid vegetations were intimately connected with the metabolic processes of the economy; he says: "I remain of the opinion that adenoid growths, while, as a rule acting mechanically, will occasionally manifest the symptoms of a veritable disease which is allied to other affections of the blood vessels, glands and lymph systems, and which should be regarded as having a dominating influence on metabolic processes. It is thus placed in alliance with acromegaly and

Figure 4.
Blood vessels at the base of a hyperplastic epipharyngeal tonsil, showing their radial arrangement. At *a* and *b* are shown how the fibrous tissue prevents the collapse of the blood vessels.

myxedema." The pharyngeal adenoid ring has been identified with the digestive or absorbent process on account of its histological resemblance to the adenoid structures in the intestinal walls. But the position of the epipharyngeal tonsil would seem to preclude its participation in such a process. On account of its resemblance to the structures which in fetal life are actively employed in the production of hematogenous elements, namely the spleen, thymus, liver, certain observers have endeavored to connect it with the hematopoetic process. Analogy is not born out when we remember that after birth when these organs have ceased their hematopoetic functions, the adenoid structures of the pharynx in the large majority of cases just begin to appear. Again, their great variability would militate against their participation in such an important process. Against the theory that they protect the organisms against infection we have only to recall the frequency with which they serve as portals of entry for diphtheria, scarlet fever, rheumatism, etc.

Hyperplasia of the pharyngeal tonsil has been ascribed to various pathological processes by numerous writers

Michael Dansac divides them into those of tubercular, syphilitic and scrofulous origin, and bases his deductions on a histological study of 32 cases of adenoids occurring in the clinic of Gougenheim at Lariboisieri Hospital.

The relationship of tuberculosis to adenoids has furnished a theme for discussion by many writers during the last few years, and we are now in position to say that although the epipharyngeal tonsil may not infrequently be infected by the specific germ, its hyperplasia is far more often due to other causes and may be seen by the following table:

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Broca in | 100 | cases | found | 0 | cases | of | tuberculosis; |
| Gottstein in | 33 | " | " | 4 | " | " | " |
| Lemoyez in | 32 | " | " | 2 | " | " | " |
| Brundel in | 64 | " | " | 8 | " | " | " |
| Plundar in | 32 | " | " | 5 | " | " | " |
| Luzzatti in | 50 | " | " | 2 | " | " | " |
| Breeger in | 78 | " | " | 5 | " | " | " |
| Wex in | 210 | " | " | 7 | " | " | " |
| Total .... | 599 | | | 33 | | | |

Pillet found giant cells in three cases out of ten specimens examined, but we know that giant cells alone found under conditions such as those present in his cases are not evidence of tuberculosis. The reaction of adenoids to the tuberculin test has been negative in the large majority of cases.

Figure 5.
Lymph follicles with their more deeply stained peripheries.

In one of G. Gottstein's cases, from which the adenoids were removed, evidences of tuberculosis were found. At the time of removal the patient was 12 years old. Six years afterwards she was again examined. Only the slightest remnant of adenoid tissue remained, which had a perfectly normal appearance and the patient herself was in possession of perfect health.

That we often find adenoids in strong healthy children, must disprove the hypothesis that they are always of tubercular, scrofulous or syphilitic origin. Causes of hyperplasia occurring in the pharyngeal tonsil are various. Among the most frequent stand the acute infectious diseases of childhood; especially provocative are scarlet fever, diphtheria, measles and whooping cough, and next to these come recurrent attacks of acute catarrhal inflammation and acute lacunar inflammation. The frequency with which these attacks occur in the epipharyngeal tonsil has been scarcely appreciated, as pointed out by Gradle.

Whether the systemic disturbances which accompany adenoids, anemia, aprosexia, etc., are in all cases due solely to their mechanical presence is scarcely probable. The recent experiments of Massini and Genta seem to prove that adenoid tissue occurring in the postnasal space possesses a secretion which when injected into rabbits causes a slowing of the pulse rate and a rise in the vascular pressure, thus placing by analogy adenoids among the glands having an internal secretion, such as the thyroid, adrenal bodies, pituitary gland, etc.

Their coincident appearance in many cases of scrofulosis is admitted. But we are all aware that in certain cases in which the general condition can scarcely be differentiated from true scrofulosis, immediately on removal of the growth in the postnasal space the vital capacity of the individual improves and the patient in a short time is restored to full health. This condition has been called by Moritz Schmidt, pseudo-scrofulosis.

HISTOLOGY.

Bickel proposes to confer the name of tonsil on only those masses of adenoid tissue which meet the following specifications: 1, a sharply-defined base; 2, diffused infiltrations of leucocytes around lymph follicles; 3, crypts and sinuses; 4, the lymphatic tissue must approach close to the surface and contain acinous glands.

Figure 6.
Acinous glands from the deeper portions of an epipharyngeal tonsil.

The epipharyngeal tonsil possesses all of these characteristics. It is covered with epithelium, the character of which varies with the age and size of the growth; in the normal young tonsil it is rather constantly cylindrical and possessed of cilia. In the older growths, however, this cylindrical epithelium assumes more often a pavement-shaped variety and the cilia are lost. The epithelium is arranged in rows of two in the young tonsil; in the older tonsil they may increase to three or five. Immediately beneath is the limiting membrane, which as a rule is very delicate. Below this comes the substantia propria consisting of the lymph follicles, leucocytes, blood vessels and lymphatics, the whole being held together by a reticulum of connective tissue. In a number of sections stained with the fer-hematoxylin method I was unable to find a nervous structure. The size and number of the follicles in any growth vary greatly. The follicles may be so large as to be visible to the unaided eye in the stained section; there may be two to five layers from the surface to base. Nearly always the periphery of the follicles stain more intensely

than the central portion. Deep within the tissues are found the acinous glands. The arrangement of the blood vessels is somewhat fan-shaped. J. Hynitzsch has observed villous elevations within the crypts which show a great similarity to the papillomatous proliferation seen in mammary and ovarian cysto-adenoma. The same author has made a study of the cysts occurring in the hyperplastic pharyngeal tonsil and divides them into two varieties corresponding to the two types of epithelium lining the crypts, namely, the columnar and squamous cysts. These columnar epithelial cysts vary in size from a microscopic body to that of a bean, occur frequently and contain a clear ropy mucus, often rich in leucocytes and occasionally red blood corpuscles. In two cases the cysts contained multinuclear elements or giant cells. Their nuclei vary in number, are of irregular arrangement and never situated along the line of the cell, thus essentially differentiating them from giant cells found in tuberculosis. Squamous epithelial cysts are much rarer. These cysts frequently contain horny lamellæ concentrically arranged, the center composed of amorphous granular masses, fat globules and cholesterin crystals. They may be regarded in all instances as due to retention of secretion by closure of the mouths of crypts. The process of involution may be explained as follows: Maturing of the embryonal tissue takes place first in the oldest portion of the growth, which is probably at the base of the tonsil. This process, together with the peculiar fan-shaped arrangement of the blood vessels may be seen in Figure 4, and here, too, we may gain a hint as to the cause of hyperplasia in certain growths. The firm connective tissue in which the blood vessels of the base are embedded prevents diminution of their caliber and this interferes with the normal decrease in the nourishment of other portions of the growth. We thus have a relatively increased blood supply to that portion of the growth supplied by the blood vessels affected. The change of embryonal into adult connective tissue takes place in the interfollicular tissue. Each follicle is enclosed in a bag, as it were, of maturing connective tissue; this gradually contracting tends to cause the follicles to disappear by pressure atrophy.

### CONCLUSIONS.

1. The tissue composing adenoids has a wide distribution throughout the body.

2. The epipharyngeal tonsil is an organ normally present in all individuals.

3. The function of the epipharyngeal tonsil is at present unknown. Whether it is simply an evolutionary vestige or has to do with metabolic or other processes is equally uncertain.

4. Its wide distribution among the various members of the animal kingdom, its embryological connections, and its identity with lymphoid structures elsewhere in the body, would suggest that the epipharyngeal tonsil *has* a function.

5. The histology and the experiments of Massini and Genta would tend to place it in the class of glands having an internal secretion.

6. The relation of tuberculosis, syphilis or scrofulosis to adenoids is not etiologic. Adenoids may be affected with tuberculosis, etc., but only as any other organ may be similarly affected.

**Important Scientific Post for a Woman.**—Since Nencki's death, his assistant for many years, Miss Sieber-Schumord, has been appointed director of the Institute of Experimental Medicine at St. Petersburg, in his place.

## THE ROENTGEN RAYS

### IN DIFFERENTIATING BETWEEN OSTEOMYELITIS, OSSEOUS CYST, OSTEOSARCOMA AND OTHER OSSEOUS LESIONS, WITH SKIAGRAPHIC DEMONSTRATIONS.

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In periostitis, as well as in osteomyelitis, the skiagraphic signs are well marked. Abscesses can not only be localized, but their extent is so well outlined that the technical steps of the operation can be definitely traced in advance. The feeling of security the surgeon has while proceeding under the mentorship of the skiagraph gives a satisfaction unknown in former years, when often the whole femur had to be exposed simply in order to ascertain whether all foci were detected. If the Roentgen

Fig. 1.—Osteomyelitic focus in the middle of the humerus.

rays show but one focus, no other regions of the bone need be attacked.

In such cases a preceding trauma often opens the avenue of infection. The pain, the edema, the fever, and general debility may be sometimes so little marked that differentiation becomes difficult. The skiagraph not only clears this difficulty of diagnosing this disease, the true etiology of which is still so obscure, but it also furnishes a trustworthy guide for the operative technic at the same time.

Osteomyelitis is of a decidedly infectious character, generally due to the invasion of the staphylococcus aureus, which fortunately has a tendency of forming circumscribed foci in the vascular tissues of the bone, viz., the medulla, and sometimes the periosteum. The predilection of osteomyelitis is for the long bones of young

individuals. It is self-evident, therefore, that the early recognition of osteomyelitic foci renders the prognosis of their evacuation extremely favorable.

In the case of a lady of 20 years, the slow onset of the symptoms did not seem to indicate an acute inflammatory process. Pain at the thickened area of the middle of the humerus, being present only temporarily, the fear of a malignant growth was apparently not unjustifiable. The skiagraph at once did away with all anxiety, since it revealed the presence of periostitic proliferations and a circumscribed osteomyelitic focus (Fig. 1). The focus was easily exposed by the chisel, under the mentorship of the skiagraph. That the skiagraph has also spoken the truth by demonstrating the integrity of the remaining portions of the humerus, was shown by the speedy recovery of the patient.

The focus was distinguished by its light shade in the midst of the dark shadow of the cortex. The regularity of the cortical line and the external proliferation distinguished it from osteosarcoma, and the absence of distension from osseous cyst.

Necrosis and other later stages of inflammatory processes can be represented still more distinctly. The size and shape of sequestra can easily be made out. It can,

Fig. 2.—Sequestrum, exfoliating from radius.

furthermore, be ascertained how they are located in their bony coffin and whether they still adhere or are exfoliated. Under the guidance of the Roentgen rays extraction is very easy.

In the case of a man of 23 years, who had crushed his left little finger, amputation was deferred until septic tenontitis and tenosynovitis had developed. The extensive tissue necrosis in the muscular interstices of the forearm necessitated free and deep incisions, which showed the radius, as well as the ulna, denuded of its periosteum. Amputation was therefore authoritatively advised, but nevertheless the chances for further conservative treatment were taken. Fortunately, the process became confined to the forearm and recovery seemed to make rapid progress. Only a small fistula at the dorsum of the forearm did not close. The repeated introduction of a probe did not reveal the presence of rough bone, and we were inclined to suppress our suspicion of the presence of a sequestrum. Our surprise was great when the Roentgen rays revealed the presence of a large splinter exfoliated from the inner portion of the radius, the surface of which was covered by osteophytes (Fig. 2). The direction of the skin incision, a slight oblique, was dictated by the position of the sequestrum as shown by the skiagraph. When the sequestrum was reached it was found to be covered by thick fibrous tissue at the upper surface, while the inner and lower surfaces were exposed. This explains why the introduction of the probe gave no positive information, since it had touched only the fibrous cover and did not come in contact with the rough lateral or posterior surface. Recovery was perfect eleven days after the operation.

Fig. 3.—Arthritic changes in the enlarged external condyle.

The regeneration of osseous tissue can also be well studied in such cases by the skiagraph. Foci of the same character are sometimes formed in typhoid fever. They must be treated after the same principles.

In diagnosing inflammatory processes in the joints, great difficulties are sometimes offered. As stated before, in the case of acute rheumatism, the integrity of the articular outlines are well marked. The same applies to acute inflammatory processes due to infection. In the latter event the distension of the joint by the serous or purulent effusion may be represented by the skiagraph. In chronic rheumatic processes the articular bone line appears somewhat irregular. In arthritis the contours of the bone epiphyses appear irregular, like indentations on some portions, while others are veiled. The arthritic deposits are recognizable as light shadows

of the deformed epiphyses, as they consist of translucent uric acid salts, while their periphery is distinguished by a dark sphere. In arthritis deformans the ostitic proliferations are especially abundant and are well represented by the rays.

Figure 3 illustrates the case of a laborer of 50 years, who sustained an injury of his elbow eleven years ago. He reported that recovery took place after several months and that the elbow had remained stiff ever since. During the last few years inflammatory signs had manifested themselves, which were regarded as rheumatic. No other joints were involved. Since then he also had repeated attacks of pain in the elbow joint. When I examined the patient for the first time I found the elbow very much thickened and fixed at a sharp angle. Pressure below the external condyle caused intense pain. Crepitus, so often found in old arthritic processes, could not be produced in this instance, as the joint permitted no motion. There were no indications of tuberculosis, syphilis or gonorrhea. The skiagraph revealed the presence of mal-union (sideward displacement) of the coronoid process of the ulna, which probably had given the first impetus for the development of the arthritis deformans, the light shaded changes of which are especially well marked in the external condyle of the humerus. The left condyle shows synostosis with the olecranon. Removal of the projecting fragment by the chisel, separation of the adhesions, and the partial resection of the external condyle, the seat of predilection for the acute attacks, was advised as a therapeutic means.

In tuberculosis of the bones and the joints the Roentgen rays not only give information as to the seat and extent of the tubercular areas, but also offer the only means sometimes of differentiation from other affections, the clinical signs of which resemble it. The walls of an intra-osseous focus appear thickened. Some portions are translucent and their contours irregular. The articular outlines of a tubercular joint have lost their regularity and appear diffuse, cloudy and sometimes shaggy. In later stages, when cheesy foci have formed, for instance, their areas appear translucent. The cortex is sometimes entirely destroyed and leaves the impression of having been scooped out with a gouge. In most cases, especially when the soft tissues are also affected, atrophy is marked. Figure 4 represents the feet of a man of 58 years, who suffered from tuberculosis of the ankle joint for two years. He was treated by the injection of iodoform-glycerin and the administration of guaiacol carbonate. The left leg recovered entirely, leaving considerable deformity and ankylosis only. The astragalus shows deformity and extensive destruction. The right leg is in an acute inflammatory stage, cheesy pus being present in the ankle joint. When there is calcareous degeneration the foci appear dark-shaded.

Fig. 4.—Tuberculosis of both ankle-joints.

In the case of extensive tubercular destruction the eroded and displaced cartilages can be studied. In tubercular coxitis, the spontaneous upward dislocation of the femur and the separation of its head in the acetabulum can also be easily recognized.

The only marked signs of tubercular spondylitis consist sometimes in the presence of an abscess below Poupart's ligament, the nature of which would not be properly interpreted, if the plate did not prove the existence of vertebral changes.

It need not be said that the early detection of a tuber-

cular focus enables the surgeon to do a conservative operation, while at the late stage of extensive destruction such efforts are futile, as it is sadly illustrated by skiagraphic examination.

By realizing that so-called osteosarcoma is the most frequent of morbid growths and that of all tumors sarcoma offers the gravest prognosis, the importance of a thorough diagnosis need not be emphasized. The matrix of osteosarcoma, like that of all osseous growths, is either the periosteum or the medulla, in combination with the tissue originating from their proliferation.

Periosteal sarcoma is of a moderate hardness and contains either round, spindle or polymorphous cells. It attaches itself to the bone laterally, but may, in its further development, encircle it entirely. Periosteal sarcoma may become a real osteosarcoma at a later stage, when osseous trabeculæ are formed. The skiagraph of periosteal sarcoma is characteristic, since it shows fine spiculated trabeculæ that radiate from the surface. Periosteal sarcoma spreads rapidly and is highly malignant. Whenever the diagnosis of periosteal sarcoma is made, amputation should be insisted upon.

Sarcoma originating from the medulla is called myelogenous and is of a less malignant character. It may

Fig. 5.—Osteosarcoma of upper third of humerus.

be classified as soft, hard, alveolar and multiple. The soft myelogenous variety shows the ordinary sarcomatous texture. Its predominating feature is the presence of round cells. It has a decidedly more benign character than the periosteal type. Therefore it justifies a conservative attempt, that is, extensive extirpation. It produces carious destruction of the spongious portion which may cause spontaneous fracture. At a later stage the osseous shell will yield to the spreading sarcomatous tissue. This variety has a predilection for the long bones, especially their ends, and predominates at the lower epiphyses of the femur, tibia, humerus and radius. Skiagraphs of the soft myelogenous variety show the absence of osseous tissue, small fragments of it being sometimes left here and there.

In the case of a woman, age 28 years, who had fallen on her hand when it was in dorsal flexion, the faint outlines of boneshell in a soft myelosarcoma were shown. The swelling resulting from the injury produced the impression that a fracture of the carpal end of the radius was sustained.

Three months after the injury, when the patient came under my observation for the first time, a small deformity was noticed just as it is observed in a badly united fracture of the carpal end of the radius. But the consistency of the epiphyseal end was soft. The skiagraph failed to show the evidence of bone tissue, only one small remnant being left at the outer aspect of the radius. Resection was advised, but before the patient submitted to it another month had elapsed, during which time the neoplasm had grown to a great extent. The result was reported as being fair, eight months after the operation.

The hard myelogenous variety generally called endosteal or central sarcoma, also shows the ordinary sarcomatous structure. Its distinguishing feature is its fibrous texture and the presence of spindle cells. Some portions contain various tissues; the spindle-cell tissues often contain giant cells. If smaller or larger bone trabeculæ are produced, it is called osteosarcoma proper;

Fig. 6.—Osteosarcoma of lower end of radius.

if there are calcareous deposits, petrifying sarcoma; and if the tissues become vascular, a telangiectatic sarcoma will be formed, so that it may be mistaken for an aneurysm.

In later stages, when there is a regressive metamorphosis, fatty or cystic degeneration may take place. In this case, neoplasms that occur especially in the femur, tibia and inferior maxilla, may attain an enormous size.

The skiagraph of osteosarcoma proper (Fig. 5) shows more osseous tissue than the former variety, but its outlines are very irregular. Osteosarcoma proper usually commences near the epiphysis of a long bone. Skiagraph No. 6 shows the irregular sarcomatous proliferation of the lower one-third of the radius in a woman of 40 years. Treatment was not resorted to until two months afterward, when the skiagraph (Fig. 7) re-

vealed the destruction of the lower third of the radius and of a large portion of the carpus. Resection was performed; the result was perfect, as was illustrated by another skiagraph taken more than four years after the operation, which showed the regeneration of the osseous tissue.

The alveolar variety is characterized by its alveolar stroma, which contains nests of large cells. They have a predilection for the bones of the skull and the trunk. The multiple variety (also called myeloma) is characterized by the presence of numerous whitish foci, which consist of small round cells. It has the same structure as the lymphoid sarcoma and is nearly exclusively found in very old individuals, for whose skull and trunk they show the same predilection as the former variety.

The skiagraph of the alveolar, as well as the multiple type, shows the foci as light irregular shades. The structure of their type, especially their manner of destroying the pre-existing bone tissues, the thin osseous walls and the trabecular formation, is the standpoint for their skiagraphic study. The intra-osseous tension is responsible for the expansion of the compact osseous layer, which is thus made gradually weaker and at last almost

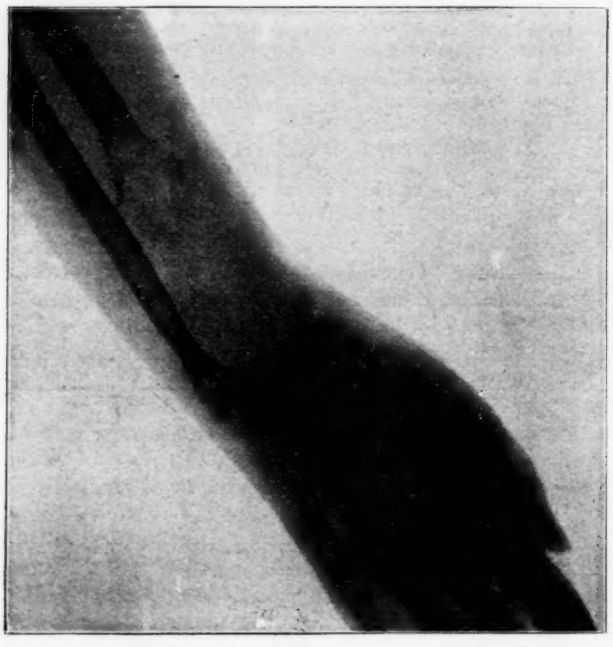

Fig. 7.—Destruction of lower third of radius and portion of carpus by osteosarcoma.

entirely disappears. Thus we see that it is the abnormal and indefinite outline, or even the entire absence of the osseous cells, the cortex especially disappearing, which is more or less characteristic for the various types of osseous sarcoma in contradistinction to other bone diseases.

As to differentiation, it may be said that in aneurysm the bone would show intact. Attention was called by me to the usefulness of the Roentgen rays in a case of femoral aneurysm, which, on account of extremely thick walls, showed no pulsation, so that originally it had been taken for osteosarcoma, an amputation then having been considered. The femur appearing intact, it was evident that there was a disease of the soft tissues.

In chronic osteoperiostitis the walls appear irregular, but the irregularity is one-sided and—exteriorly—there is a globular or spindle-like shape (see Fig. 1). In tuberculosis the shade will be cloudy or shaggy. In osteomyelitis, the cortex shows nearly normal outlines (Fig 1).

The skiagraphic expression of syphilis is also characteristic. In the congenital form, large ossified areas are recognized in the epiphyses that would appear translucent in their normal cartilaginous condition. On the other hand, light areas are noted in the diaphyses as an expression of insufficient calcareous deposition. The synostosis between the cartilaginous epiphyses and the diaphyseal end appears as a very marked line, indicating the abundance of calcareous salts deposited there. Gummata show regular light-shaded foci. Their disappearance after the administration of iodid of potassium confirms the diagnosis.

Figure 8 shows the evidence of hyperostosis of the clavicle, scapula, ribs and the upper third of the humerus in a boy of 5 years. The pelvis, femur, tibia

Figure 8.

and fibula were similarly affected. The suspicion raised by the skiagraph was verified by the success of the specific therapy.

Osseous cyst showing the same clinical signs as osteosarcoma may easily be confounded with it. But in osseous cyst, while there is the same bulging as in osteosarcoma, the line of the cortex, on account of its thinness, appears narrow, but well marked and regular. The fluid center of osseous cyst renders the skiagraph translucent, the light shade showing the same regularity. The adjacent epiphyses are also normal in osseous cyst. The treatment of their various affections being difficult, the importance of a correct diagnosis is evident.[1]

Osteomyelitis, necrosis, tuberculosis, syphilis and osseous cyst demand conservative measures, while sarcoma calls for the most radical treatment. On the other hand, how painful must it be for a surgeon to find that because

1. "Osseous Cyst," Amer. Jour. Med. Sciences, June, 1901.

of his error of diagnosis such radical steps have been taken unnecessarily that, in other words, an extremity may have been amputated where only an osseous cyst existed, which could have been cured by simple incision.

It is, indeed, not very difficult to confound the two diseases, osseous cysts resembling osteosarcoma in its slow painless onset often preceded by an injury; in the gradual bulging of the area involved; and in their preference for youthful age and the long bones. These being characteristic features of osteosarcoma as well as of osseous cyst, it is evident that the differential diagnosis can not be made by considering the history, nor by inspection, nor by palpation.

The fact that the interior of the osseous cyst is filled with opaque bloody serum, and its walls are lined with a smooth coat, while in osteosarcoma solid masses are formed would indicate that an exploratory incision combined with microscopic examination would clear the question of diagnosis.

But the Roentgen rays give us more valuable information than the exploratory incision itself, and for the patient a Roentgen ray exposure is certainly more agreeable than an exploratory operation. Should an operation be decided upon, the microscopic examination can as well be made then.

At the early stage, osseous cysts, be they at the tibia or at the femur, are easily overlooked, the symptoms being insignificant. Sometimes there is a very slight pain that comes and goes. The joints are freely movable; and neither inspection nor palpation reveals any abnormality. After several months have elapsed the circumference of the extremity may appear very slightly enlarged, but it may not be before a fall on the thin shells of the cortex has produced a fracture that the symptoms are fully appreciated.

Other osseous diseases like osteoma, osteomalacia, rachitis and chondroma also offer some skiagraphic peculiarities in proportion to their various textures. Osteoma, of course, shows the shape of the osseous deformity, but there is a normal architectonic structure.

On account of the dissolution of the calcareous salts, osteomalacia is, similar to rachitis, distinguished by the absence of an osseous shade. In contradistinction to osteosarcoma, the whole bone appears translucent. In chondroma there is a regular light-shaded area of lobular shape according to its cartilaginous character.

Metastatic carcinoma in bones can also be represented.

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## A CASE OF RELAXATION OF THE PUBIC JOINTS DURING PREGNANCY.

JOSEPH B. DE LEE, M.D.

CHICAGO.

Mrs. B., age 39, XII para, four abortions, all deliveries normal. This pregnancy has advanced to the ninth month. Beginning at the sixth month, patient has had difficulty with the limbs and pain about the pelvis. The pains began on the right side over the sacro-iliac joint and have been getting worse there, also extending to the other sacro-iliac joint and to the pubis. Now the pain extends down the right leg, and all motions of the lower trunk and extremities are painful, being referred especially to the pelvic girdle, the pubis and the right side. Difficulty in walking has increased up to the present, locomotion at the present time being laborious and distressing. She can not cross the legs and all movements of the trunk and lower extremities are carried out with difficulty and pain. In sitting down or getting up, she has to use the hands and arms, fixing the shoulder girdle and thus suspending the trunk. She can lie only on the side, and can not turn nor assume the erect posture without assistance. The pains and disability are worse at night, worse upon beginning to move around, then better after being up a while, but get more unendurable as she becomes tired with exertion. There is no trouble with the bladder or the bowels, and no paresthesia.

Examination: General health fair; abdomen much distended, somewhat pendulous; uterus large; varicose veins in the legs and vulva, which patient says are quite painful. Patient sits on the edge of a chair with legs extended, slightly everted and abducted. There is an apparent paraplegia, but the patient can use all individual muscles; no sensory disturbances; knee jerks slightly exaggerated—as is usual in pregnancy. Abducting the thigh produces great pain at the pubis and at sides of the pelvis, as do nearly all passive movements of the legs. The patient herself says that all the trouble is "found around the pelvis." Pressure over the pubis creates outcry of pain, much less so when the rami are touched. Pressure over the center of the sacrum is not painful, but over the sacro-iliac joints is distinctly so, the demarcation being striking. Squeezing of the pelvis together from the sides is acutely painful, in fact, one thinks of an inflammatory affection of the joints.

Over the pubes a distinct separation of the ends for three-eighths of an inch can be felt, and, when the thigh is manipulated, the ends can be felt to ride on each other.

Vaginally the posterior surface of the pubis is very tender. The interval between the ends of the pubic bones is spanned by a tense elastic membrane, which can be pressed into the joint one-eighth of an inch. There appears to be no fluid in the joint, but this was hard to determine. Moderately extended movement of the thigh showed an up and down riding of the pubic ends of one-fourth of an inch. The tenderness extended down the rami pubis about two inches. There was no tumefaction of the ends of the bones. The sacro-iliac joints can not be palpated owing to the unruliness of the woman.

The history that this woman gives is interesting, but does not throw much light on the causation of the affection. Her mother died of tuberculosis; the father is living. She has had neither rheumatism nor any particular sickness. She menstruated early and regularly. She was married at 18, had a daughter within a year, another child within two years, and was six months pregnant with a third—now a boy of 17—when she "caught cold" and "had inflammation of the womb," being in bed for two weeks. Since that time she has had a persistent pain in the sacrum and the right side, which was especially marked during the numerous pregnancies that have intervened till now. Two or three weeks after delivery the patient has always regained her previous condition. At each succeeding pregnancy the pains and disability have gotten worse. They also begin earlier and the degree has been more marked until the present, when the patient is all but bedridden. She says, however, that in the last week or so there is a slight amelioration in the symptoms. A tight pelvic girdle had been used for a while without the slightest benefit. Counter-irritants and rest have helped, but at times the patient has needed narcotics.

The ancients taught that the pelvic joints always softened during pregnancy and opened during labor, so that the fetus could readily pass through. They ascribed difficult labor sometimes to the too great rigidity of the joints. Later the opposite was believed to be the normal, and those cases where there was relaxation of the joints were called morbid. Recent experiments, undertaken in behalf of the operation of symphysiotomy, show that there is some softening of the joints during pregnancy, and clinical experience confirms this.

The ancients must have reasoned from analogy, having observed the softening of the joints in cows and other animals. The "sinking of the rump" and the difficulty of locomotion of the cow show the veterinarian that the

animal is near term. In guinea-pigs the pubic ligaments soften and allow a separation of the bones sometimes to the extent of an inch. The legs may even be laid flat alongside the animal. After labor the joint again becomes firm.

In women, and, to a less extent, in men, there is some movement of the pelvic bones on each other during walking, and during pregnancy there is appreciable softening of the joints. While in these cases there may be no actual enlargement of the pelvis, such dilatation is possible, and, further, this softening of the joints permits movement of the bones on each other, which must be of service in the mechanism of labor.

Matthews Duncan is of this opinion. The writer would refer the readers to this monograph[1] for a further very interesting consideration of this matter, and will allude only briefly in this article to his own researches on this subject.

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The same findings will be noted on the internal examination. The posterior pubic ligament will have to be pressed between the bones to elicit the groove, and this is somewhat painful. The riding of one end of the pubis on the other is easily felt. These findings are developed to a variable extent, and are, perhaps. a little more marked in multiparæ.

It is this softening of the joints which renders the Walcher position of value in the conduct of difficult labors, and the sacro-iliac joints in symphysiotomy are thus enabled to open partly. R. Braun von Fernwald, in 1895, demonstrated the mobility of the pubis in his studies of the after-effects of symphysiotomy. During labor one can, by putting the patient in extreme Walcher position, show a narrowing of the outlet, the tuberosities of the ischii approaching each other; then by changing to the extreme lithotomy the distance between the two tuberosities increases. When the head is passing the outlet it can be held back, and sometimes even be visibly pushed back, by dropping the legs as far as possible towards the floor.

The histologic changes in the joint have been studied on animals more than on the human. The joints partake of the general imbibition of the pelvis tissues, the cartilage is swollen, and there is not seldom a collection of synovial fluid in the sac. The separation of the joints may be actual or latent, developed only during labor.

Ordinarily the patient does not complain, but sometimes this condition is the cause of more or less distress during the pregnancy. These conditions are in line with those which were described in the case of Mrs. B., and the distinction between the normal and the pathologic is not easy to draw. The main symptoms are as follows: Pain in and about the pelvis, referred to the site of the joints, and especially to the particular one involved; difficulty in locomotion; easy tiring, with a general sense of weakness; inability to arise from a sitting posture; relief by walking, followed by pain in the pelvis, necessitating rest; the condition is worse in the morning, better in the day, and worse again in the evening; pain reflected up and down the nerve trunks of the pelvis, simulating neuralgia, or even pains in the hypogastrium simulating abdominal disorders. When the patient is bedridden the case is decidedly pathologic. On examination no cause for the symptoms can be found till the condition of the pelvic joints is discovered. The tenderness of the pubic cartilage is the most prominent finding. The sides of the joint are painless, but pressure directly over the middle evokes lively expressions of suffering. Then the groove may be found. Deep pressure over the sacro-iliac joints elicits pain, but not over the coccyx. The gait is peculiar, wabbling, "like a duck" as one woman expressed it. A distinct rising and falling of the crests of the ilii can be seen which is not all due to the tilting of the pelvis. The distress in walking may sometimes be a real pain referred to the affected joint or joints.

The diagnosis is easy if the possibility of the condition be kept in mind.

So far as treatment is concerned, I have found nothing of permanent or constant benefit. The bowels should first be gotten into prime condition. The diet should exclude meat as far as possible, and diuresis should be encouraged with milk, buttermilk, water, etc. The patient must refrain from long walks and keep off her feet as much as possible, with a needed amount of exercise. The pelvic girdle has been recommended, but I have found very little, if any, benefit derived from it. Topical applications of stimulating liniments [Lin. chloroformi and ammoniæ, āā] have given temporary partial relief. The condition disappears rapidly after parturition. The patient should be encouraged by the information that the condition, though painful, will render labor easier and will disappear after it.

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## Clinical Report.

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PERITONITIS FOLLOWING INGUINAL ADENITIS AND RETROCECAL PURULENT INFILTRATION.

F. H. RUSSELL, A.M., M.D.

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CHICAGO.

On March 12 the patient, a female, age 15 years, was brought into the Presbyterian Hospital, presenting symptoms of acute appendicitis. She was in a state of semi-stupor. Her temperature was 102, and her pulse 120. The abdomen was quite tympanitic and very tender to the touch. There was marked muscular rigidity over the right side. She held her right leg in flexion and any movement of the limb caused intense pain.

Professor Fenger saw the patient in consultation soon after her entrance and decided to operate immediately.

Her stomach was washed out and she was taken to the operating room. After the patient was anesthetized a vaginal examination was made. This proved to be negative. The McBurney incision was made. As soon as the abdominal cavity was opened, some clear serous fluid was found. Cultures were made from this but unfortunately they were subsequently spoiled. The appendix was found free and uninvolved. The walls of the cecum showed quite marked infiltration. Nothing was found to account for the trouble. Farther exploration of the abdomen was not warranted on account of the poor condition of the patient, so the abdomen was closed and the patient put back to bed.

Her condition gradually grew worse. The pulse became more rapid and thready. Early the next morning it was 160 and two hours later it could not be counted. The temperature that night was 102, the next morning it was subnormal. She

was restless and delirious after the operation; later she passed into coma and vomited several times. Death took place the next day about noon, twenty hours after the operation.

A complete autopsy was made by Professor Hektoen a few hours after death. The anatomical diagnosis was as follows: Vaccination wound of the right leg; suppurative adenitis of the right inguinal and iliac glands; purulent infiltration of the retro-cecal tissues; diffuse purulo-fibrinous peritonitis; recent laparotomy; acute splenic swelling and general parenchymatous degeneration; ecchymoses in lungs; hemorrhagic erosions of stomach and right adherent pleuritis.

The vaccination wound, measuring two centimeters in diameter, was located on the outer surface of the right leg below the knee. It was covered by a crust and healing by granulations.

The appendix was lightly imbedded in a fibrinous exudate. Its lumen was patent and its mucous membrane smooth. About it the intestinal coils were bound by slight adhesions and those in the pelvis were deeply congested.

The chief interest in the postmortem centered in the condition found in the right retro-peritoneal region. In the cellular tissue behind the cecum and in front of the muscle was considerable infiltrations of pus extending down toward the inguinal region. The deep inguinal and iliac glands were enlarged and soft; some of them contained small abscesses.

The examination of the generative organs, intestines, and bones of the pelvis and spine was negative.

Cultures from the purulent fluid in the abdominal cavity, from the heart's blood and from the inguinal glands showed a pure culture of the staphylococcus pyogenes albus.

In the histological examination, made by Mr. Johnson, all the internal organs were found intensely congested. In the liver were many areas of focal necrosis. The inguinal lymph glands, stained by Gram's method, showed a few groups of cocci among the closely crowded lymphoid cells. No cocci were found in the tissues surrounding the vaccination wound.

After the postmortem was made, the interest in the case led to further inquiry into the history of her sickness previous to coming to the hospital. This was kindly furnished by Dr. Kearsley, the family physician.

The patient had not menstruated. For some time she had frequently complained of sharp pain in the stomach immediately after eating. This was so severe at times that she would leave the table before finishing her meal. Six weeks before coming to the hospital she was vaccinated at school by the Health Department physician. A large number were vaccinated at the same time. Her previous vaccinations were unsuccessful. This time she became quite sick. Her mother says a large "lump swelled up" in her right groin. For several days previous to her illness she limped, leaning forward and to the right in order to save her right side.

Her sickness began five days before she was brought to the hospital. She was suddenly seized by a very severe chill in the school room. The teacher was alarmed, a carriage was procured, and the principal carried the patient from the room to the carriage. When she reached home her condition was as follows: temperature 104, pulse 130. She had vomited once. She complained of pain in her back, hips and lower part of the abdomen. During the next twenty-four hours she took small doses of calomel, vomited many times and had free evacuations from the bowels.

The second day her condition was much the same as the first, except that her temperature was reduced by antipyretics.

On the third day she complained bitterly of the pain in her right hip. She said the pain radiated from the hip across the lower abdomen. She lay with the right lower extremity fixed in extension. Flexion of the right thigh or any motion in it caused excruciating pain. There was tenderness on pressure over the posterior surface of the right hip. The abdomen was moderately distended and over the lower part there was a board-like rigidity. There was acute tenderness over the lower one-half, most marked on the right side.

Drowsiness amounting at times almost to a stupor was a marked symptom throughout the whole illness. The vomiting ceased the third day. Her bowels moved each day by an enema and gas was passed. On the fifth day the enema was retained and it was necessary to pass a long rectal tube.

From the beginning of her illness the pain and tenderness gradually increased in the right lower quadrant of the abdomen and the tendency to stupor became more constant.

From a consideration of the facts stated it seems evident that this was a case of infection following vaccination. There was the local infection, and from the clinical history we are justified in assuming that this was followed shortly by an enlargement of the superficial inguinal glands; then proceeding along the anatomical course the infection traveled to the deep inguinal and iliac glands, later producing a purulent condition of the retro-cecal tissues. The close proximity of these tissues to the peritoneum rendered that cavity easy of access for the micro-organisms. A local peritonitis developed, which gradually became general.

Death following vaccination was of quite frequent occurrence for a number of decades following its introduction by Jenner. During the last decade, however, fatal cases have been very rare, owing to our modern antiseptic precautions and to a more careful preparation of our vaccination material.

This case, though, is of more than ordinary interest because it presents one more of the many conditions which must be taken into consideration in making a differential diagnosis of appendicitis. This emphasizes that the surgeon, in making a diagnosis, should have in his possession all the facts which go to make up a complete clinical history of his patient.

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**Technique for Determining the Freezing-Point of Blood or Urine.**—Waldvogel describes his technique as follows in the *Archiv f. Exp. Path.*, xlvi, 1 and 2: About 8 or 10 c.c. of the urine or blood to be examined are poured into a small test-tube with a rubber ring around the top. This tube fits into a larger one with a space of about 1 cm. between the bottoms of the tubes and of 2 or 3 mm. between the walls. Both are then placed together in the freezing ice and salt mixture. The temperature is determined by a small thermometer, graduated in fiftieths of a degree C., with a rubber ring around it also, to keep it from touching the walls or bottom of the tube when inserted in the urine or blood. When it registers —2 C., the fluid is stirred with the thermometer and it congeals almost instantaneously into a solid mass of ice. Diluting the fluid a little does not interfere with the determination of the freezing-point. Blood must be placed on ice for 48 hours before it is tested. The zero of the thermometer must correspond to the freezing-point of distilled water as verified from time to time.

**Post-Laparotomy Pneumonia.**—Henle stated at the recent German Congress of Surgery that pneumonia consecutive to abdominal operations is usually lobular, located in the lower lobe and more common on the right than on the left side. Most cases develop the second day. Their frequency increases with the age. Gastro-enterostomy, on account of carcinoma, is followed by pneumonia in 14 per cent. of the cases with a mortality of 9 per cent. The same intervention, done on account of a non-organic cause, is followed by pneumonia in 9 per cent. of the cases but no mortality. It is rarely observed after the radical treatment of hernia or "cold" appendicectomy, while it is comparatively frequent after celiotomy and incision of an abscess in the appendix region. The Schleich method of narcosis, according to the statistics, predisposes to this complication more than general narcosis. The most important factor is getting chilled, and since warm tables and tincture of soap instead of water have been used at Breslau, the number of cases of pneumonia has materially decreased. Kuemmel has observed 40 cases of pneumonia with 29 deaths in the course of 1070 laparotomies. The patients who succumbed were all cachetic, usually from malignant disease. Stolper proclaims that fatty embolism predisposes to pneumonia. This is liable to occur after any attrition of the adipose tissue, and attrition of this kind is frequent in laparotomies.

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THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

51 Market Street : : Chicago, Ill.

*Cable Address: "Medic, Chicago"*

*Subscription price: Five dollars per annum in advance*

SATURDAY, JANUARY 4, 1902.

## THE STATE OF THE BLOOD ASSOCIATED WITH ADRENAL DISEASE.

From the first description by Addison of the symptomatology of adrenal disease, anemia has been considered one of the characteristic symptoms, but there have been wide differences of opinion as to the number of red and white blood corpuscles and the percentage of hemoglobin, both in animals from which the adrenal glands were removed and in human beings presenting evidences of adrenal disease. Addison himself reported a case in which the number of leucocytes was increased. Some observers believe that there is a reduction in the total amount of blood, and an alteration in its composition, rather than any numerical change in the formed elements. Others, however, have reported a marked diminution in the number of red blood corpuscles, as well as a marked deficiency in the amount of fibrin. By some, the blood conditions have been described as normal, while others have found an increase in the number of lymphocytes. The question is, therefore, one upon which further light is needed.

In two cases reported by Hamel[1] the condition of the blood was found practically normal, except for the presence of a relatively large number of lymphocytes. One of the cases terminated fatally, despite the employment, among other things, of adrenal extract; and postmortem examination disclosed caseous changes in both adrenal bodies, and also a calcareous bronchial gland with cheesy softening at the center. In the other case marked improvement took place, the treatment consisting essentially in the administration of easily digested food in generous amount, together with absolute rest in bed. Both cases presented an absence of hydrochloric acid from the gastric juice, and indicanuria was present in the first. There was evidence of old tuberculosis at the apex of one lung in the second case.

According to prevailing opinion, it is the function of the adrenal bodies to remove from the blood toxic products, and failure in the function of these glands will give rise to the symptoms of adrenal disease. These substances are evidently not true blood-poisons, as they do not give rise to the blood changes of anemia. The absence, in cases of tubercular disease of the adrenal bodies, of numerical changes in the cellular elements of the blood, notwithstanding the obvious anemia that is generally present, is attributable to a diminution in the total amount of blood—a true oligemia—just as is so often the case in connection with pulmonary tuberculosis. This is supposed to be due to the destructive action of the toxins generated in the course of the tuberculous process. In cases, however, in which the adrenal glands are the seat of carcinoma, the blood changes of anemia develop, and this fact may be of diagnostic significance. Of course, the condition of the blood will be influenced by the presence of complications.

1. Deutsches Archiv f. Klin. Med., 71 B., 2, 3 H., p. 240.

## EXPERIMENTAL DYSENTERY.

The interest in dysentery has received new impetus through the discovery by Shiga, of Japan, that one form of dysentery is caused by a bacillus of the colon-typhoid group. Investigators both in this country and elsewhere are now busy in studying the relations of this bacillus to the dysenteries observed from time to time in various places. The special form of dysentery known as amebic seems to be a distinct and definite disease. Its chronic course; the characteristic ulcers in the large intestine that result from a peculiar colliquative necrosis, principally in the submucosa associated with the presence of a large number of amebæ in the tissues; the formation of peculiar secondary necroses with softening in the liver resulting in the so-called amebic abscess, are features that stamp the disease as *sui generis*. The failure to obtain the ameba in pure culture and to produce therewith experimental amebic dysentery in animals has prevented the definite establishment of the exact part played by the ameba coli in the causation of this interesting disease. At first it was thought that amebic dysentery occurred only in tropical and subtropical regions, but increased experience has proved that it may develop in permanent residents of temperate districts.

Recently Harris,[1] of Atlanta, Georgia, has reported the results of some interesting experiments upon young dogs. He did not succeed in producing any form of dysentery by the injection into the large intestine of great quantities of pure cultures of Shiga's bacillus. Similar experiments with cultures of the bacteria in the feces of patients with amebic dysentery also failed, while success was secured by injections of the feces containing the ameba. Hence he would draw the conclusion that the ameba is the sole causative agent of the dysentery in the young dogs experimented upon and which in every case proved fatal. The ameba was found in large numbers in and about the ulcers in the intestines of the dogs as well as in the diarrheal stools, which also contained masses of blood and mucus. In two dogs there developed also small abscesses of the liver. He adds a number of interesting histological details in regard to the ulcers and the abscesses of the liver. There seems to be no doubt, then, but that young dogs—older dogs are not susceptible—offer a favorable opportunity for the further study of the more exact genesis of the lesions associated with the amœba coli or dysenteriæ.

1. Virchow's Archiv, 1901, 166, 67-76.

It is therefore permissible to expect that further investigations will render more clear the method and manner in which are produced the peculiar and destructive lesions and the serious symptoms of amebic dysentery.

## ORGANIZED MEDICAL DEFENSE.

The question has frequently been asked whether it would be feasible, practical and for the best interest of our profession for medical societies to take on themselves the defense of their members when sued for alleged malpractice, etc. On the ground that what affects the honor and standing of one member, affects the honor and standing of the entire profession, it would seem that the question should be answered in the affirmative. This view was taken by the New York County Medical Association at its meeting last month, when it adopted a plan for the defense of its members in such suits. There seems to be no good reason why the outcome of the plan[1] should not be as favorable as its projectors anticipate. There is certainly no question but that an organized effort on the part of the profession will have a tendency to deter blackmailers from bringing suits and will discourage pettifogging lawyers from working up such practice among the ignorant or dishonest classes. The public, too, will obtain a different impression as to the motives that usually instigate such suits.

While it is true that suits for malpractice are more commonly brought against surgeons, yet physicians are continually subject to these worse than annoyances. And, without doubt, this class of suits is becoming more frequent, for, unfortunately, those who have attempted this form of blackmail have found the general practitioner an easy prey. The physician attacked is too often ready to compromise regardless of the fact that he knows he has done only what is right. This compromise is made from the feeling that a legal defense would entail financial sacrifices, and the average physician in such a predicament would rather settle the case by the payment of a small sum or by giving up the collection of a just debt. By so doing he thinks that he would be avoiding an unprofitable and unpleasant notoriety at least.

If this compromising affected only the individual who compromised it would not be such a serious matter. But the fact is that every case so settled is an encouragement to the bringing of other similar suits and a breeder of other blackmailing schemes. It thus becomes a question of medical polity, something which concerns the profession as a whole. From this point of view—and it is the correct one—the physician or surgeon who compromises these claims is doing a positive injury to other members of the profession as well as to himself. If the result of these suits is something that affects the many, the many must step in and unitedly defend them. An organized defense is the only feasible way of meeting the rapidly growing number of blackmailing threats and alleged malpractice suits. This new departure in association helpfulness will therefore be watched with interest by other societies.

1. See page 43.

## NEWER SIGNIFICANCE OF VENEREAL DISEASE.

All who are interested in the welfare of the race, as regards the confessedly growing danger from venereal diseases, are agreed that the most potent possible prophylactic factor under present circumstances is the spread of true ideas as to these diseases, their not uncommon significance for the deterioration of the general health, and their frequent obstinancy to effectual treatment. The necessity for the education of the public has been often pointed out. As a matter of fact, medical opinion in these matters has changed very much in the last twenty years, and at present there is no subject in medicine in which popular and scientific opinions are farther apart than as to the significance and curability of venereal disease. Of this change in medical opinion the general public is, unfortunately, unaware.

Since the discovery of gonococcus, medical knowledge has advanced so rapidly that even specialists have had to modify their views so frequently as to be almost discouraged at the prospect of ever reaching absolute truth. It is almost as needless to say as it is sad to confess that these advances in knowledge, far from making the absolute cure of the disease easier, have shown rather how obstinate to treatment the disease may prove. Long ago Ricard said jestingly: "We know when a gonorrhea begins, but the Lord only knows when it will end." Only in very recent years has the realization come as to how literally true the expression may be. Finger, the well-known Vienna specialist, says[1] that there are cases of gonorrhea which, after primary treatment, run an absolutely latent course as far as the patient is concerned, though they may be manifest to the physician and may demonstrate their presence by reinfection of the patient or by immediate infection of others. As Jullien says: "An unobtrusive disease which hardly shows more than a trifling secretion, that causes no pain, does not affect the urine and does not stain the linen, is nevertheless susceptible of becoming virulently active, of taking on complications and of being transmitted." Continental authorities are not the only teachers of this frequent persistence of gonorrheal infections. Here in America, and in England, this fact is often insisted upon. Gaillard Thomas has said: "Specific vaginitis, transmitted by men who are utterly ignorant that the sins of their youth are at this late period bringing them to judgment, is one of the most frequent, most active and most direful causes of pelvic trouble in women."

It is this aspect of what has been called the milder form of venereal disease that the public ignores. A gonorrhea used to be compared to a cold in the head, and this mistaken notion, once a commonplace among medical men, still obtains outside the profession. The ne-

1. Last edition of his book, "Syphilis and the Venereal Diseases."

cessity for education in the matter is obvious. There is no doubt that the establishment of special lectureships at the universities for the teaching of the true significance of venereal disease would be a source of good in this country like it has been in Germany. The temper of our people will not permit this eminently desirable addition to the general university curriculum, but it should be kept in mind as one of the advances in practical education that must come sooner or later. Meantime the family physician must pave the way for more public instruction by insistence on the change of opinion with regard to venereal diseases that has come to medical men during the present generation.

## PRELIMINARY EXAMINATIONS FOR MEDICAL DEGREE.

Thus far there are three states in the Union that provide for preliminary examinations under state auspices of those entering upon their medical studies. These examinations are especially for those not possessing collegiate degrees or other satisfactory evidences of educational qualifications; in short, they are a state assurance of proper preliminary education. The need of this has been obvious in the past, and the legal requirement in these states is evidence of the opinion of the leaders in medical reform that it still exists. We are still cheapening our profession by admitting to it the unqualified and the competition of medical schools tends to render this evil a progressive one.

It is said that in Ohio since the enforcement of the preliminary education provisions of the medical practice act, and especially during the first year, there was a serious decline in the number of students in the medical colleges of the state, the colleges of adjoining states profiting in the same proportion. Nevertheless we find the medical journals of Ohio giving evidence of the satisfactory working of the law and congratulating the profession on the elevation of the standard that has been its result. Better equipped students are coming in from other states, recognizing the prestige that comes with higher requirements and even the beginning of the second year's trial of the law shows that the loss in numbers is likely to be but temporary. The requirements in Ohio and also in New York and Pennsylvania—a good high school education—are modest enough for admission to our higher class medical schools, but they are probably all that can well be exacted at the present time. There should be no relaxation in the demands, and the time will come—the sooner the better—when still higher exactions will be the rule. The misfortune is that state preliminary examinations, in default of other satisfactory evidence of the necessary preliminary educational requirements, are not universal, which results in a hardship to the schools in those states that have adopted this principle. It may be that any general movement to bring this about in the other states would arouse some opposition, open or otherwise, from a certain class of medical colleges; but if so, what harm? It is well to know who are for progress and the best interests of the profession, and who are ready to sacrifice both for selfish personal and pecuniary considerations. Let those states that have good practice acts add this feature to them by additional legislation and let it be included when such laws are enacted in states that do not already possess them.

The public opinion that has chiefly to be educated in this matter is that of the profession itself. We have gone so long accepting a relatively inferior position—that is, relatively to what it should be—that we do not appreciate our disadvantages. Nevertheless we can not remain long in this blissful ignorance or permit any other kind of ignorance to be so much in evidence among us as it has unfortunately been in the past. The profitableness of the movement for better qualifications is already becoming evident to our Ohio brethren as it had already been to those in New York and Pennsylvania. The sooner the rest of the country realizes the fact and puts its knowledge into practice the better. There is no possible excuse nowadays for the admission to our medical colleges of those lacking in preliminary education. High schools, colleges and universities are within reach of the poorest.

## THE COCAIN HABIT.

It appears that the cocain addiction is, thus far, more a particular vice of the lower classes, but as such it seems to be spreading all over the world. According to Anglo-Indian papers it has become so prevalent among the street boys and school boys in Calcutta that the government has had to take the matter up with the idea of devising means for checking the evil. While as yet it is confined to the classes mentioned, it is feared that it will spread to others. In our own country it is particularly a vice of the Southern negro, and some states and municipalities have already legislation on the subject. The policy in India as regards opium has been thus far for revenue only, and it will be interesting to observe what will be done as regards cocain.

## STATE REGULATION OF MEDICAL COLLEGES AND MEDICAL EDUCATION.

One of the encouraging signs of the times is the evident interest in medical education taken by those outside of the profession. The latest is contained in the report of Prof. Delos Fall, State Superintendent of Public Instruction of Michigan. His recommendations are based on the results of a study of reports made to him by those appointed to inspect business and medical colleges. The following are his recommendations regarding medical colleges:

**A standard of preliminary education should be required, and a board created to examine all students before entering upon the study of medicine. Some safe, uniform standard for graduation ought to be fixed and insisted upon as a condition precedent to a license to practice medicine. The financial solvency and stability of each institution should be more carefully guarded and insisted upon. Medical colleges should not be chartered in small towns where clinical and hospital facilities, so necessary to the proper education of a physician, are not**

ordinarily found. A constant and thorough visitation and inspection of such institutions should be regularly made by a board of visitors competent to fairly judge of their merits. The capital of every medical college should be large enough to warrant the employment of men learned in their profession and the provision of equipment in all branches adequate to promise a proper medical course.

## THE NATION SHOULD PAY THE LATE PRESIDENT'S PHYSICIANS.

It is reported that the executors of the estate of the late President McKinley have felt obliged in the course of their duties to ask for the bills of the physicians who attended him. These bills probably under the law constitute a legal claim which has to be met or waived by the creditors, hence the request. But it is not a matter for surprise that the surgeons are reluctant to send in their bills, which would naturally be large on account of the responsibility assumed and the other peculiar circumstances of the case. However, while the Ohio laws may require this action on the part of the executors, strict justice does not require that what the late President left should be depleted by the charges. He was stricken down at a public function while performing his official duties as President of the United States, not as a private individual, and the Nation is properly responsible for the expense which was incidental to his public position. There ought to be no question as to this point and no hesitation on the part of Congress to make an appropriation for the purpose. A corporation—as a railroad company—always considers it its duty to assume the expense of caring for its servants when injured in the performance of their duties. The Nation can certainly do no less in regard to its servants.

## SUBSTITUTION EXTRAORDINARY.

Substitution as generally understood is one of the abominable evils against which physicians have to be on their guard. The only way to get rid of this evil is for a physician to insist on having his prescriptions filled by a reliable druggist, and then watch this druggist occasionally to see that he does not fall from grace. The reputation of the physician, the health, and sometimes life, of the patient depend on the correct filling of prescriptions. While we believe that very few druggists are guilty of substitution, some of them are. We refer now to the substitution of "something just as good" for a similar preparation and which the druggist may believe will answer the purpose, especially if it is cheaper. But the druggist who places his "belief" above the written instructions of the physician will be dishonest in other ways and should be treated accordingly. Our attention, however, has been called to another form of substitution that is more dangerous, more vicious, and more criminal than that referred to above, and one that is more difficult to guard against. We have received a circular letter from the Farbenfabriken of Elberfeld Company, in which they record their experience in ferreting out a despicable adulteration of their product. The facts in the case were brought out in a lawsuit and revealed that certain men were actively engaged in counterfeiting labels and boxes and filling them with all sorts of material utterly unlike the genuine and then selling them to druggists as the real article. While we believe that this form of adulteration is unique to this particular instance, it is well that we recognize the possibility of such an occurrence in the future. It is further quite probable that this form of fraud would be worked only on unscrupulous druggists who desire to buy the cheapest without regard to quality.

## HUMAN AND BOVINE TUBERCULOSIS.

The New York physician who recently inoculated a young woman with alleged bovine tuberculosis has thus far succeeded in obtaining notoriety, which was probably what he desired. But the notoriety he has received is not altogether a desirable one. His experiment was poorly conceived, lacked many of the essentials for a satisfactory scientific proof of what it was intended to show, and is at last discredited by the findings of the Brooklyn health authorities that his inoculated cow did not have tuberculosis. If the young woman has the disease, as he asserts, it must, therefore, have been from some other cause. As regards the ethics of the performance there can be but one opinion. Had he been confident that Koch's views were correct and that there was no danger in the inoculation, he would have a better case, but the reverse of this was the fact, and the general impression left by the performance as to his regard for human life is not pleasant. If the woman should die, whether from consumption or any other infection introduced by the inoculation, his position would not be an enviable one. It would have been more chivalrous as well as more generally creditable to him if he had tried his experiment on himself and had left somebody else to observe the effects. Perhaps the profession would have profited more had this been the course followed.

## THE EFFECT OF ALCOHOL ON NATURAL IMMUNITY.

For years the venerable N. S. Davis has fought the use of alcohol as a therapeutic agent, maintaining in the face of a more or less general professional opinion to the contrary that alcohol even as a drug is dangerous and detrimental. This teaching in regard to alcohol seems to be gaining ground and is receiving notable reinforcement from recent experimental investigations in regard to the action of this substance in infections in animals. The work of Abbott and of Laitinin, already commented upon in these columns,[1] shows conclusively that alcohol increases the susceptibility of animals to infections. Most of the experimenters have employed rather large quantities of alcohol, quantities relatively so large as to be directly toxic. In order to avoid the criticism likely to be brought against the applicability to human medicine of the results of these experiments in which large doses were used, Goldberg[2] studied the influence of small doses upon natural immunity as illustrated in the case of the pigeon with respect to B. anthracis. The pigeon is relatively little susceptible to anthrax infection. Goldberg, using a brand of Russian spirituous fluid containing 40 per cent. alcohol and no fusel oil, found that 3 c.c. make a pigeon more or less intoxicated; further, that medium and large non-intoxicating doses of alcohol

1. THE JOURNAL A. M. A., 1900, Sept. 8.
2. Centralbl. f. Bakt., Abthell. i, 1901, xxx, 696-700, and 731-741.

materially reduce the immunity of pigeons to anthrax. Chronic alcoholic intoxication of pigeons also has the same deleterious effect; and small doses of alcohol have no therapeutic effect upon experimental anthrax in pigeons infected repeatedly with fatal doses of anthrax bacilli. Here we have another set of experiments, the results of which are directly unfavorable to alcohol. Like the results of other researches in the same line they do not furnish the slightest support for the rational use of alcohol in human infections. While it may be urged that the results of animal experiments are not directly applicable to human pathology it should be remembered that microbic infections as a rule follow the same general laws in animals as in man. In both cases the mechanisms of reactions to infection have a general likeness. There seems to be no question but that alcoholics are less able to withstand various infections than the abstinent. The gravity of pneumonia in the alcoholic is well known. To this extent at least clinical experience tallies with animal experiment, and it certainly behooves the physician to assume a decidedly skeptical attitude with respect to the often very free use of alcohol in the treatment of infections.

### THE ADMINISTRATION OF IMMUNIZING SERUM BY MOUTH.

A prominent serum expert of St. Louis, one of the members of the coroner's committee to investigate the recent cases of tetanus in that city, attributes in part to an immunizing effect of internal ingestion of antitoxin, the fact that a few took the disease who were exposed by inoculation with the infected serum. In at least fifteen cases, he says, the development of tetanus was prevented by the administration of the serum by the mouth. It is not exactly clear why this was done; but the expert in question says that it was in cases in which it was intended to immunize the members of the family surrounding the diphtheritic individual. It would seem from this statement that some of these must have contracted diphtheria and received injections of the contaminated serum, which did not cause tetanus in them because of its previous ingestion. This will be, to most of the profession, a new method of immunization, though there has been in the past occasional mention in the literature of such administration. That it should have been so extensively and so effectively practiced in St. Louis is certainly remarkable. In this connection a report that comes from Iowa may also be mentioned. The State Board of Health is there confronted with the problem, whether this method of producing immunity is reliable against another disease, smallpox. A homeopathic doctor, it appears, has been giving certificates of protection to school children to whom he had administered supposed vaccine in the form of pills. The question of their efficiency has been relegated to a committee of the Board and its decision is expected at the coming meeting. There are contingencies of this form of treatment that ought to seriously affect its popularity were their possibilities generally understood. If the mucous membrane can absorb the vaccine or other antitoxin, as it must for this method to be of any value, what insurance is there against unpleasant local gastric or intestinal complications and what dosage is safe in this regard while otherwise effective? If the method is harmless because the absorbent power is slight or the gastric secretion destructive, the assurance of protection is lessened if not vitiated altogether; at least this would seem to be the case with diphtheria antitoxin. With vaccine, on the other hand, unless the secretions are protective anv slight stomach or intestinal lesion of continuity, such as often exists without the knowledge of its owner, might produce very uncomfortable results. Either horn of the dilemma has its unpleasant aspects and one can only agree with the St. Louis expert when he says that this method of administration for immunizing purposes is not to be generally recommended. It is surely not supported by scientific investigation and evidence, and it certainly is not appetizing or otherwise esthetically attractive.

## Medical News.

### CALIFORNIA.

**Los Angeles Hospital** has been incorporated with a capital stock of $25,000.

**Pasadena Hospital** received a Christmas gift of $1000 from E. M. Fowler, Detroit, Mich., to be used in the purchase of surgical instruments and appliances for the operating room.

**Fight Against Medical Law Futile.**—In the case of the five Oakland individuals accused of practicing medicine without permits from the State Board of Medical Examiners, the court decided that the arguments urged against the constitutionality of the law creating the board were not such as should be sustained. He therefore overruled the demurrers and ordered the defendants to appear for trial.

**Consumptives Barred.**—Immigration Commissioner Hart H. North, San Francisco, has made a ruling which will prevent any alien consumptives from entering that port. The practice has been in the past to discriminate between consumptive steerage and saloon passengers. Mr. North has communicated with the authorities at Washington, and in accordance with several decisions already rendered he has decided that there is to be no class distinction and that all must be treated alike.

### DISTRICT OF COLUMBIA.

**Hospital for Foundlings.**—The Secretary of the Interior has recommended to Congress an appropriation of $6000 for the maintenance of the Washington Hospital for Foundlings.

**Casualty Hospital.**—Dr. H. Wood Tobias has tendered his resignation as resident physician and has been appointed resident physician at the Columbian University Hospital. He is succeeded by Dr. Paul L. Freeman.

**To Aid the Blind.**—The Board of Charity has recommended to the District Commissioners that the Aid Association for the Blind be allowed compensation at the rate of $10 per month for blind persons. The board recommends that the compensation be made from the appropriation for the relief for the poor.

**To Regulate Sale of Milk.**—Senator Gallinger has introduced a bill to regulate the sale of milk and cream in the District of Columbia. It provides that no person shall sell or produce for sale milk or cream without a permit from the Health Officer. The granting of the permit is to be conditional with the compliance with sanitary conditions prescribed by the health officer.

**School Inspection.**—The Legislative Committee of the Medical Society of the District of Columbia have endorsed the action of the commissioners in recommending the appropriation of $5500 by Congress for the medical inspection of the local public schools. It is intended to appoint eleven medical inspectors at a salary of $500 per annum. It is expected that the positions will be filled from among the competent physicians in the city.

**To Prevent the Sale of Unwholesome Food.**—The health officer has recommended the following regulation governing the sale of meats, and the same has been approved by the commissioners. No person shall sell or offer for sale in the District of Columbia any sheep or lamb slaughtered for food until the pelt, head and feet thereof shall have been removed. Any

person violating the provision of this section shall upon conviction thereof be punished by a fine of not less than $5 nor more than $25 for each and every offense.

**Surgeon-General Sternberg's Report.**—The Surgeon-General reports that under the contract made by him under the act of Congress for the care of indigent sick, the Providence Hospital has admitted during the past year 1576 patients with a monthly average of 142. He also reports for the Barnes Hospital at the U. S. Soldiers' Home that 838 sick soldiers were admitted during the year. He states that there has been a decided increase in the number treated during the past two years as a result of army casualties incident to the recent campaigns in the war.

**Water Supply of Washington.**—Washington City has in all probability the worst-appearing and the most unhealthy water for drinking purposes of any large city in the United States, and possibly of any city in the world. Recently the water has been of a dirty-brown color with large particles of solid matter floating throughout. The Marine-Hospital Service universally reports the presence of a large number of typhoid bacilli, and their report is corroborated by the chemists of the Health Department. The large number of cases of typhoid fever in the District has attracted special attention, and in consequence of the notoriously unhealthy character of the water, and the many appeals of the local government and the citizens, it was generally agreed in Congress that a suitable filtration plant should be provided as an adjunct to the local reservoir as a necessary prevention of typhoid and other diseases. This expectancy of the District, however, is greatly jeopardized by the action of the Secretary of the Treasury in refusing to approve the recommendations of the District Commissioners for the amount of the appropriations deemed necessary by them after the most careful consideration and exercise of the greatest economy. It is sincerely hoped that Congress in its wisdom, and in the full appreciation of the menace to the public health in consequence of the filthy water supplied to the citizens of the District, will agree on the estimates furnished by the Commissioners of the District and provide, among other things, the absolutely necessary filtration plant.

**Resolutions of the Medical Society in Lunacy Cases.**—Dr. D. S. Lamb, president of the District Medical Society, has forwarded to the Commissioners a copy of a resolution adopted by the Society relative to the disposal of lunacy cases. He asks the Commissioners to take such action as is best adapted to secure its enactment in the new District code. The resolution is as follows:

*Resolved,* That the Committee on Legislation be authorized and directed to take such action as is, in its judgment, best adapted to secure the enactment of the legislation as follows:

1. Legislation providing for the detention of alleged lunatics pending the formal adjudication of the question at issue, whenever, in the judgment of two physicians of not less than three years' experience and permanent residence in the District of Columbia, such alleged lunatics are, if unrestrained, dangerous to themselves or to others, or are so situated that their environments will if continued unchanged until after such formal adjudication seriously militate against their chances of improvement or recovery.

2. Legislation authorizing the appointment of trustees to take charge of the property of persons not insane, but rendered mentally incompetent by the habitual use of drugs of any sort, in the same manner as the proposed section 115 of the proposed code of laws for the District of Columbia, prepared by the Committee on Legislation of the Bar Association, seeks to authorize the appointment of trustees to control the property of persons addicted to the use of intoxicating liquors.

**Authority for the Army Medical Corps.**—Mr. Hay, of Virginia, has introduced a bill in Congress to define the duties of the Medical Department of the United States Army.

The object of the bill, "is to prevent epidemics of preventable diseases in the army by giving to the medical department the power to control the sanitary conditions of camps and posts, and to place responsibility somewhere as to the health of the army. As the law now is, there is no responsibility anywhere for conditions which have cost many thousands of valuable lives, and have caused the country to pay many millions of dollars, when both could have been saved by proper legislation. There is no intention to take from the line officer in command any necessary military power. This question has been like so many others brought home to us as a result of the Spanish war. The results of present laws and army regulations were shown up with startling distinctness during the war with Spain. It is not necessary to name any particular camp; it is well known that such preventable diseases as typhoid fever, dysentery, etc., were rife in almost all of them from May, 1898, to June, 1899, the total deaths in the army was 6,619; of these 3,116 resulted from typhoid fever, dysentery, and diarrhea, all preventable diseases. Two thousand seven hundred and seventy-four of these deaths were from typhoid fever."

Mr. Hay says there were many thousands who recovered, but many of them are drawing pensions, or have applied for them; 6000 pension claims have been allowed to Spanish-American war soldiers, some 45,000 claims are still to be adjusted. About 1 to 7 has been the average allowed. A careful examination of this list will show that the two-thirds of these claimants are men who were disabled by preventable diseases, or for the representatives of men who died from these diseases. The cost to the government of such conditions is beyond computation; pensions to the disabled, pensions to widows, and dependents, the cost or replacing the dead, all of these things pile up the expenses of maintaining the army and government.

## ILLINOIS.

**Dr. G. W. Miller,** Woodson, is seriously ill with cholelithiasis.

**St. Anthony's Hospital,** Rock Island, has been incorporated, the object of the corporation is to maintain a hospital and a home for the aged, and care for and educate orphans.

**Smallpox in an Asylum.**——The daily press of December 31 announces an outbreak of smallpox in the Home for Feeble-Minded Children at Lincoln. The institution contains over 1000 children and 183 officers and attendants. Over 100 cases are said to be in the Home.

**City Health Board Loses.**—Dr. Walter Ryan, Springfield, who was arrested at the instance of the city for failure to report a case of smallpox, as required by the city ordinance, was found not guilty. Dr. Ryan and the city physician differed as to the diagnosis, the city physician believing the case to be one of smallpox, while Dr. Ryan's diagnosis was chicken-pox.

**Smallpox.**—A few days ago 47 smallpox patients were hauled over 15 miles of rough country roads from East St. Louis to Belleville, because of a dispute of the local tradesmen with the authorities regarding payment for supplies furnished. ——Palmer has a case of smallpox.——Posey now has 25 cases, an increase of 21 in a week.——Astoria reports one case.——Virden township has filed a bill against the county for $1950 for expenses incurred in its epidemic of smallpox between October 14 and November 4.

**Reports of Births and Deaths.**—The State Board of Health has sent circulars to all physicians in the state calling their attention to the "Act requiring reports of births and deaths, and the recording of same; regulating the interment or other disposal of dead bodies, and prescribing a penalty for non-compliance with the provisions thereof," which became a law, January 1. The sections of this law relating to report of birth and disposal of the dead read as follows:

Section 1. It shall be the duty of every physician and midwife in the State of Illinois, who attends the birth of a child, to report said birth within thirty days after its occurrence to the county clerk of the county in which said birth takes place. Such reports shall be made on blank forms, to be prescribed and issued by the state board of health, and shall contain such information as may be directed by said board in resolutions, copies of which shall be printed on the reverse of the blank forms aforesaid. When no physician or midwife has been in attendance, then it shall be the duty of the parent, or in case of the disability of the parent, of the householder, to make said report within the time and in the manner aforesaid.

Section 2. Every physician, midwife, parent or householder, who shall comply with the foregoing provisions shall receive for each report of birth made in the manner directed by the state board of health, the sum of twenty-five cents. At the close of each quarter of the calendar year the county clerk shall certify to the county treasurer a list giving the number of births reported to him, and the names and addresses of the persons reporting the same, and payment therefor shall be made by the said county treasurer to the persons named in said list: Provided, That no duplicate report shall be paid for.

Section 3. No person shall inter, cremate, deposit in a vault or otherwise dispose of any human body, until he has received a permit so to do, as hereinafter provided, which permit shall bear date when issued, shall state the name of the deceased, the date and cause of death, the manner in which body will be disposed of and the place of such disposal, the name of the person to whom the permit is issued, and the name of the attending physician, midwife or coroner, and shall be signed by the official by whom it is issued.

Section 12. Any person or persons who shall violate any of the provisions of this act, shall be deemed guilty of a misdemeanor, and upon conviction thereof, shall be fined not less than ten nor more than one hundred dollars, or shall be imprisoned in the county jail not to exceed thirty days, or shall suffer both such fine and imprisonment in the discretion of the court.

The board expresses the hope that this law will meet with the approval of the profession and that in its enforcement the board will receive its hearty assistance and co-operation. A rigid enforcement of the law will not only furnish to the board statistics of incalculable value, but will place Illinois at the head of all states in the matter of vital statistics. While in many states there are efficient systems of registration of deaths, in but one or two are births completely registered at the present time.

### Chicago.

**The Illinois Medical College** held the opening exercises of its January term at its new college building, Washington Boulevard and Halsted Street, January 2. This building was

recently purchased by the college at a cost of $50,000, and has been remodeled and newly furnished at a cost of $15,000.

**Medical Staff Candidates Examined.**—The civil service commission held an examination under the direct charge of Drs. John R. Neely and Daniel R. Brower for internes at the County institutions. Of the 14 applicants 4 were women. Eleven of those who took the examination were placed on the eligible list.

**Consumptives Seek Shelter.**—The continuance of cold has driven consumptives in large numbers to the consumptive hospital at Dunning, materially interfering with the plans of the County Superintendent to utilize a portion of the hospital for the relief of the over-crowded condition in the hospital for the insane.

**Low Death-Rate.**—The statistics of the city health department show that the total mortality of 1901 will not exceed 24,300 and, figured on the minimum midyear population of the United States census office, 1,758,000, the annual rate per 1000 will be about 13.8—the lowest ever recorded for this or any other city of more than 1,000,000 population. The lowest previous rate—based on the United States census figures of population—was 14.36 per 1000 in 1897. For the previous ten years, 1890-1900, the average mortality rate was 17.67, or 21.8 per cent. higher than this probable rate for 1901.

**Cook County Hospital Needs.**—In his report to County Board of Commissioners, made December 23, Dr. Denslow Lewis, president of the attending staff of Cook County Hospital, made the following recommendations:

1. The construction of a separate building for skin and venereal cases. He suggests that a three-story building be erected, the first floor of which might be utilized by the County Agent for the storage and distribution of supplies.
2. Some provision should be made by the proper authorities for the care of inebriates. This includes the victims of epilepsy, apoplexy, mild insanity, heart or kidney disease, the sandbag or other form of assault or accident, who may be found unconscious on the public streets, and who are usually considered to be under the influence of alcohol. A separate building should be provided for the care of alcoholics, under the direction of the attending staff.
3. A children's pavilion apart from the hospital building is desirable. It is often advisable to permit the little patients to get out of doors, and for that reason their ward should be on the ground floor.
4. Provision for the *x*-ray work will have to be made. Probably $1500 will be needed. The laboratory is now nearly completed, and the funds from the sale of clinic tickets, together with the amounts received from voluntary reduction of salary on the part of the president and certain commissioners, will probably be sufficient for its maintenance. A photographic outfit will be needed later in the year.
5. A card index system for the proper compilation and preservation of the history sheets and other records is a necessity if periodical bulletins are to be issued showing the scientific work done at the hospital. The appropriation of $1,000 made for this purpose last year was not used because the laboratory was not completed, and it was impossible to furnish full reports of cases without instancing the pathologic findings.

## IOWA.

**Dubuque Detention Hospital,** which has just been finished, has been inspected by the Board of Supervisors and approved. Its equipment will be provided for at once.

**Iowa Methodist Hospital.**—The Hospital Association has provided for the $30,000 indebtedness on the hospital at Des Moines and has decided to erect a new building, to cost $50,000.

**Doctors Disagree.**—Dr. James P. Scroggs, Lenox, who sued Dr. A. W. Fees, of the same place, for $5000 damages suffered by the plaintiff by reason of an article in a local paper reflecting on his professional reputation, has been awarded $800 damages.

**Smallpox.**—On the Winnebago Reservation 39 deaths have occurred and 11 are now ill with the disease.——In Lincoln and Stanton townships, 15 cases were found.——Council Bluffs has had 29 cases this season.——In Pekay, north of Eddyville, there are 50 cases of the disease.——Dr. John T. Tweedy, Tabor, presented a bill for $2025 for services to smallpox patients for 45 days; but the authorities allowed only $786. He has now instituted suit against the supervisors of Fremont County for the full amount of his claim.

## MARYLAND.

### Baltimore.

**Dr. Francis Randolph Packard,** Philadelphia, lectured before the Book and Journal Club, December 21, on "The Resurrectionists of London and Edinburgh." The lecture was followed by a smoker.

**Dr. L. O. Howard,** chief of the Division of Entomology, Department of Agriculture, lectured December 16, before the Biological Club at the Woman's College on "Mosquitoes and Their Relation to Disease."

**Mortality of Baltimore.**—For the week ended December 21 there were 175 deaths, an annual rate of 17.56 per 1000. Among the causes of death were pneumonia, 25; tuberculosis, 20; Bright's disease, 17; heart disease and cancer, each, 6; diphtheria and broncho-pneumonia each 4, and typhoid fever, 3.

**Northeastern Dispensary Opened.**—The new building of the Northeastern Dispensary was opened December 17. Dr. A. D. McConachie was elected one of the directors and dean of the staff, which includes Drs. G. C. E. Vogler, J. W. Williams, S. Rosenheim, C. N. Branin, J. C. Beck, P. E. Lilly, W. M. Pearce, D. L. Dunott, S. H. Likes, T. M. Guier, and G. E. Starr.

**Cancer and Smallpox.**—The Health Commissioner reports between 400 and 500 fatal cases of cancer in this city during 1901. The disease has increased out of proportion to the population and an investigation is to be made into the matter. Smallpox has occurred here for 50 years in decennial epidemics; so far the city has escaped this year, although this is the year in which it is due.

**Personal.**—Dr. A. D. McConachie, who has been connected with the Presbyterian Eye and Ear Hospital for ten years, has resigned.——Dr. B. Bernard Broune is suffering from an infected wound of the hand received in an operation.——Capt. Wm. F. Lippitt, Jr., late assistant surgeon, serving in the Philippines, and who was severely wounded in the defense of the consulate at Pekin, has been ordered to duty at Fort McHenry, vice Dr. A. N. Stark, ordered to West Point.——Dr. Jesse C. Coggins, assistant physician at the Maryland Hospital for the Insane, Catonsville, sails for Europe today for the purpose of observing and studying the methods of caring for the insane in vogue there.

## MICHIGAN.

**Doctor Wins.**—A suit for malpractice with $10,000 damages against a Middleville physician was decided by the jury for the defendant, December 23.

**Ex-Convict an Illegal Practitioner.**—A colored man of Jackson, who was recently released after serving a term of five years in the state penitentiary for burglary, was recently fined $90 with an alternative of 90 days' imprisonment, for the illegal practice of medicine.

**Smallpox.**—Dr. M. Clark Woodmansee, Hartings, is ill with smallpox.——The disease has broken out among the Indians at Lake Vieux Desert, and is also prevalent at Crooked Lake.——At Muskegon, 17 cases have been reported.——At Birch Run, the school and churches have been closed, and all public meetings prohibited.——Potters, Calumet County, is under strict quarantine on account of 12 cases of the disease.——Two new cases have appeared at Menominee.

## MINNESOTA.

**St. Luke's Hospital,** St. Paul, profited to the extent of nearly $2000 by the charity ball recently held.

**Swedish Hospital, Minneapolis.**—The new building is so nearly completed that patients will be moved into it from the old building in a few days.

**New Hospital.**—The contract for the construction of the new hospital for Two Harbors, has been let and the work has already commenced. The building is to cost $25,000.

**Dr. Appleby Wins.**—In the suit of Simon Aramowsky against Dr. T. E. W. Villiers Appleby, St. Paul, for $3000 for alleged malicious prosecution arising from the care of a child of the plaintiff, who was treated by Dr. Appleby, the jury was instructed to find for the defendant.

**Increase in Smallpox.**—During the fortnight ended December 16, 530 new cases were reported in the state, an increase of more than 100 per cent., as compared with the preceding two weeks. An increase in the localities affected is also noticed from 72 to 119. The disease is thus far of a very mild type, and no deaths are reported. Red Lake Falls reports 39 cases, the largest from any one locality. The total number of cases in Red Lake County is 50. Clay County reports the largest number of cases of any county, 67; 18 of the cases are in Georgetown township, and Goose Prairie and Highland Grove townships each report 14 cases. Chaska reports 24 cases, and Carver County sends in a total of 56 cases. Perham township, Otter Tail County, reports 21 cases, and the county 56. Other counties reporting a considerable number of cases are: Norman County, 28; St. Louis County, 26; Pipestone County, 25; Marshall County, 25; Kittson County, 21; Polk County, 15; Hen-

nepin County, 13; Crow Wing, Jackson and Mille Lacs counties, 11 cases each.

## NEW JERSEY.

**Camden Health Board.**—At the meeting of the Board, December 23, it was reported that during the month there had been 32 cases of smallpox. A corps of 24 physicians is to be appointed to make house-to-house vaccinations. They are to be paid a fee of 50 cents for each vaccination, and a like amount for each revaccination.

**Medical Library for Trenton.**—The Trenton Medical Library Association met, December 17, and gave power to its executive committee to accept the offer of the Public Library commission to set apart a room in the Free Public Library for medical books, papers, etc., and to buy one book for every one furnished by the association. It was decided to invite all physicians, surgeons, dentists and veterinarians to join the Association, to ask each member to give what he thought was right to the fund to purchase books, the amount to be considered initiation fee and first year's dues. After the first year the annual fee will be $1. Dr. David F. Weeks is the collecting agent among the physicians and Dr. James I. Woolverton among the dentists.

**Physicians Commend Camden Board.**—The Medico-Surgical Society, at a recent meeting, in addition to commendatory remarks by the members on the action of the Board of Health for its prompt action in the smallpox cases, placed itself upon record by passing the following resolutions:

*Resolved*, That it is the consensus of opinion of this Society that the Board of Health of Camden City be commended for its prompt and efficient action in causing rigid quarantine, thus preventing a widespread epidemic of smallpox in our city; further, that the Board of Health be urged to continue the order of vaccination among all those who have not been successfully vaccinated; further, that it is the opinion of this Society that tetanus has no relation to vaccination, but is positively due to negligence on the part of those vaccinated or their parents in not having proper antiseptic care taken of their vaccination wounds, thus jeopardizing life by infection or accidental contamination; further, it is positively known to this Society, that all the cases sent to the new smallpox hospital since the beginning of the present epidemic were unvaccinated.

## NEW YORK.

### New York City.

Dr. **Paul F. Munde**, the well-known gynecologist, is very ill at his home in New York City.

**Pension to Physician's Family.**—The Board of Health has voted a pension of $300 to the widow of Dr. Charles H. G. Steinsieck, who died recently after having been a member of the vaccinating corps for seven years.

Dr. **John F. Anderson**, who was sent to England, in the interest of the U. S. Marine-Hospital Service, to study the bubonic plague, has just returned to this country, and will make a detailed report to Surgeon-General Wyman.

**Physician to the Shah.**—Word has reached this city that Dr. M. Elezarian Randolph, a member of the New York County Medical Association, who left this city a few months ago for a short sojourn in Persia, is now at Teheran and has been appointed the personal physician of the Shah.

The **New York School of Clinical Medicine**, 348 West Forty-second Street, will begin the winter series of evening lectures on January 7. These lectures are quite independent from the regular courses of instruction. All members of the medical profession are welcome. The lectures will be given every Tuesday evening up to and including March 4.

"Dr." **Julius A. Ward**, who recently brought suit to recover $90 which he alleged were due him for treatment of the wife of a lawyer, lost his suit, the Court holding that he is not a physician and is not entitled to collect a medical fee. He is a somatopath, and by virtue of his degree of D.D. uses the title of doctor in connection with his practice of the healing art. This verdict has encouraged the County Medical Society to prosecute him for illegally practicing medicine.

**Physician at the Head of the Street Cleaning Department.**—Mayor-Elect Low has selected to fill the very difficult, though highly important, position of street cleaning commissioner, Dr. John McGaw Woodbury, who served for a time as sanitary inspector of the Island of Porto Rico, and organized the first Board of Health of Ponce. After the war he was sent abroad by the United States Government, and there studied the systems of drainage and the methods of disposal of sewage and garbage and other refuse in Berlin, Frankfort and Paris.

**Reorganization of the Health Department.**—The charter of the city has made some radical changes in this department, which will go into effect on the first of the new year. At the present time, it consists of the president and two medical commissioners. The new board will consist of only three members, viz.: The health commissioner, who shall be the president, the health officer of the Port and the police commissioner. Mayor-Elect Low has announced the appointment of Dr. Ernest J. Lederle, the present chemist of the department, as the new health commissioner. Dr. Lederle, who is a doctor of philosophy and not a physician, is a graduate in chemistry from Columbia University. It is understood that Dr. Herman M. Biggs, at present the chief bacteriologist of the department, will be given charge of all the medical work of the department, under the title of medical officer, but the exact duties of this office have not yet been determined.

**Organized Medical Defense.**—The New York County Medical Association at a meeting held December 14 last, added a branch for the defense of its members against malpractice suits. This Association has employed a lawyer by the year, who in addition to representing it in all suits and threats against its members, will prosecute illegal practitioners and represent the Association in other ways. A committee previously appointed reported the following plan which was adopted:

1. The Executive Committee shall, upon request and compliance with the conditions hereinafter provided, assume the defense of suits for alleged malpractice brought against members of this Association.
2. The Executive Committee shall not undertake the defense of any suit based upon acts prior to the qualification of the accused as a member of the Association.
3. A member desiring to avail himself of the provisions of this Article shall make application to the Executive Committee through the secretary, shall sign a contract renouncing his own and vesting in the Executive Committee sole authority to conduct the defense of said suit or to settle by compromise, and shall make such other agreements as the Executive Committee may require.
4. The Executive Committee shall thereupon contract with said applicant to take full charge of said suit, to furnish all necessary legal services, to pay all necessary expenses and not to compromise said suit without consent of the accused, but the Executive Committee shall not obligate the Association to the payment of any damages awarded by decree of court or upon compromise.

### Buffalo.

**Death-Rate.**—The health report for November of the Department of Health shows an annual death-rate of 14.44 per 1000 per annum.

**Visiting Days Suspended.**—The usual visiting days of the Buffalo State Hospital have been temporarily suspended because of a fear of introducing smallpox.

**The Smallpox Situation.**—The smallpox condition is much improved. There have been but two deaths and the cases are so mild that it is difficult to impress those affected (who are Polish and ignorant) that it is essential to have a rigid quarantine. During November, 13,792 children were vaccinated in the public schools.

**Magnetic Healers Assailed.**—Dr. J. B. Coakley, chairman of the board of censors of the Erie County Medical Society, commenced criminal action against an aggregation of magnetic healers calling themselves "Antonius, the Wonderful Boy Healer, and his staff." A hearing was given them in the police court, and the prosecution showed that their claims of wonderful cures were inventions, and that they took exorbitant fees from their dupes. They were held to the higher court for practicing medicine without a state license.

## PENNSYLVANIA.

**Hospital at Saltsburg.**—A new four-story hospital building is to be erected at Saltsburg for the Clear Springs Sanatorium. It will accommodate 50 patients and will cost about $30,000.

**Emergency Hospital Ready.**—The Emergency Hospital on Sprogel Heights, Pottstown, was completed and turned over to the Board of Health, December 20. It is a wooden building of one story, 45 by 16 feet. It has a ward, kitchen and nurses' room.

**Compulsory Vaccination Urged.**—The Columbia County Medical Society at its meeting in Bloomsburg, December 20, adopted resolutions calling the attention of school boards and all persons interested to the act of June 18, 1895, regarding compulsory vaccination and urging compliance with its provisions.

**Emergency Hospitals in Mines.**—Emergency hospitals have been placed in the Delaware, Lackawanna and Western Company's mines, in compliance with the act of the legislature providing for their equipment before January 1. Rooms have been fitted at each of the company's mines with every appliance necessary to save the lives of injured mine workers. Dr. Wainwright, chief of staff at the Moses Taylor Hospital, Scranton, has instructed mine foremen in first-aid for the wounded.

### Philadelphia.

**Pocono for Phthisis.**—Dr. J. E. Rothrock, State Commissioner of Forestry, believes that he has found a highly favorable climate for consumptives in the Pocono Mountains near Stroudsburg.

**Appropriation for Consumptive Pavilion.**—In the Finance Committee of Council's report recently made, $80,000 is allowed for the construction of a pavilion for consumptives at the Philadelphia Hospital (Blockley).

**Bone Library.**—The Wistar Institute of the University of Pennsylvania is said to be the sole possessor of a "Bone Library." It contains the skeletons of almost every known animal. Each skeleton is dislocated and the bones are catalogued. Thus every bone may be studied separately in its proper class. A late addition is that of skeletons of three European apes, probably the only ones in America.

**Smallpox Outlook.**—For the week ended December 21, 76 new cases of smallpox were reported, deaths 10. The general outlook regarding the disease is hopeful, but dangerous foci for its spread still exist. One was recently discovered in which a family, including eight children, had had the disease for a month, but had concealed the fact. When a physician was at last called three of the children were in a critical condition, one dying within a few hours. The patients were speedily removed to the Municipal Hospital and the buildings for a considerable distance from the infected house were fumigated by order of the Chief of the Bureau of Health.

**Blockley Additions Blocked.**—The new additions to the Philadelphia Hospital, for which excavation has already begun, were to be erected on a triangular plot of ground adjacent to the University buildings. As this location interfered with the proposed extension of the Institute of Archeology, representatives from the university appealed to the Board of Charities and Correction asking that work on the hospital buildings be discontinued. The latter, thereupon, adopted a resolution affirming that, since there is no other available site and since the contract for the buildings has been let and work already begun, it is deemed inexpedient to make any change in the plans proposed and the site selected. The contest may be carried to the courts for settlement.

### DOMESTIC.

**Plague in Hawaii.**—A Chinaman died November 13 at Honolulu of the bubonic plague. Two deaths occurred from plague a week previously on the Island of Kauai.

**No Yellow Fever in Porto Rico.**—Dr. W. F. Smith, secretary of the Superior Board of Health, in contradiction to the statement of a Spanish newspaper, states that "no deaths from yellow fever have occurred in Porto Rico during the past three years, and no cases have been known during the past year."

**The American Society of Naturalists** and Affiliated Societies met at the University of Chicago, December 30 to January 2. This body consists of the following societies: The American Morphological Society, the Association of American Anatomists, the American Physiological Society, the American Psychological Society, The Western Philosophical Society, and the Society of American Bacteriologists. The meetings were all well attended and proved to be the most successful of the sessions ever held. We expect to have something to say of some of these societies next week.

**Hawaiian Physicians Must Understand English.**—Hereafter only physicians who are able to speak the English language will be given certificates allowing them to practice medicine in the Hawaiian Territory. The resolution to that effect was adopted by the Board of Health November 27 only after an animated discussion between the lay and the medical members, in which the former insisted that a knowledge of the English language was not a necessary adjunct to the learning of a medical practitioner. The physicians were in the majority at the meeting, however, and the new rule providing that examinations in the future be held only in the English language was adopted by a vote of three to two.

### CANADA.

**Montreal Medico-Chirurgical Society.**—At the last regular meeting of this society the following officers were elected for the current year: President, Dr. George E. Armstrong; first vice-president, Dr. H. S. Birkett; secretary, Dr. Alfred T. Bazin; treasurer, Dr. Jack; trustees, Drs. Perrigo, G. A. Brown and F. J. Shepherd.

**Ontario Medical Library Association.**—The following gentlemen have been elected officers for the year 1902: President, Dr. J. F. W. Ross; vice-presidents, Drs. R. A. Reeve, A. A. Macdonald, and W. J. Greig; secretary, Dr. H. J. Hamilton; treasurer, Dr. H. A. Bruce; curator, Dr. N. A. Powell; assistant curator, Dr. W. J. Wilson.

**Smallpox in Ontario.**—The disease is still rapidly spreading throughout the province, a dozen or more cases being reported to the Provincial Board of Health, daily. Since the first of October there have been 580 cases reported with only three deaths. There are now over 433 cases in the province. Ottawa has over 90 cases while Toronto has two.

**Physician Violates Hygienic Regulations.**—The Province of Quebec Board of Health has entered action against a physician of St. Marcel, Richelieu County, for violating the smallpox regulations. He was himself attacked by smallpox and still went even into the neighboring parish of Bagot County, without reporting his case to the health authorities of either county.

**Appointments.**—Dr. C. D. Parfitt, late of the Johns Hopkins Hospital, has been appointed resident physician at the Gravenhurst Sanitarium, Muskoka.——Dr. J. Alexander Hutchinson, Montreal, senior surgeon of the Grand Trunk Railway, has been appointed surgeon-in-chief of the Central Vermont.——Dr. W. H. Piersol, Toronto, has been appointed instructor in biology and histology at Toronto University.

**New Vaccination Order for Quebec.**—The Board of Health of the Province of Quebec has ordered every municipal council in that province to adopt, promulgate and cause to be obeyed, by-laws, to provide that two days after such by-laws come into force, any person who can not establish that he has been successfully vaccinated within seven years or unsuccessfully within six months, will be liable to a fine of $5, with another dollar for each day of delay, if he does not become vaccinated at once.

**Quebec Doctors Must Pay Annual Assessment.**—Mr. Justice Dorion in the circuit court has just rendered a judgment of some interest to the medical profession in the province of Quebec, in the case of the College of Physicians and Surgeons against Dr. Auguste Bourbonnais, M. P., for Soulanges. According to the ruling of the judge a doctor must pay his annual assessment of $2 to the governing body of the profession, or cease the practice of his profession. Judgment was rendered for the plaintiffs for $24 with costs so the doctor must have been some twelve years in arrears.

**British Columbia Items.**—Vancouver is to erect a new hospital at a cost of $100,000. The last annual report of the Victoria Royal Jubilee Hospital shows that there were 807 in-patients treated during the year and 154 out-patients. The receipts from all sources amounted to $38,091, the amount received from pay patients being $18,208.——The provincial Board of Health has issued special instructions to health officers and inspectors with regard to milk depots and dairies, and hereafter persons of uncleanly habits or afflicted with disease will be prohibited from dealing in or handling milk.

**Field Hospital for South Africa.**—The Imperial authorities have accepted the offer of a Field Hospital from Canada for service in South Africa. It will have no connection with the Third Contigent which will leave Halifax about the last of January, but will form a distinct unit by itself. Dr. A. N. Worthington of Sherbrooke, Que., will go in charge as surgeon-colonel, he having already served in South Africa with the Canadian Artillery. Dr. H. D. Johnson of Charlottetown, P. E. I., will be lieutenant and Dr. Jones of Halifax, captain. Two other medical practitioners will accompany it, Drs. Roberts and H. E. Tremayne of Toronto.

**Muskoka Cottage Sanitarium.**—The medical superintendent, Dr. J. H. Elliott, has made his report for the past hospital year. Of the 99 cases treated during the year, 15 have been discharged apparently cured, and 29 with the disease arrested. Of the latter number, 14 gave promise of cure had their financial condition permitted a longer sojourn in the hospital. It is considered highly satisfactory that in 44 out of 99 cases the disease had undergone more or less complete subsidence. The average gain in weight has been 13 pounds, and there has been an average gain in those remaining over three months of 14½ pounds. The cases were classified on admission as follows: Incipient, 24; advanced, 43; far advanced, 32.

### FOREIGN.

**Pellagra Congress.**—The second National Italian Antipellagra Congress will meet at Bologna next May.

**Royal Commission on Tuberculosis.**—This committee has accepted two farms in Essex offered for experimental purposes.

**Smallpox in London.**—The smallpox epidemic is steadily increasing. On December 28 there were 637 cases under treatment.

Dr. **Samuel Smiles,** of London, author of the "Self Help" series, celebrated his 90th birthday on December 23. His last book, "A Publisher and His Friends," netted him $10,000, which he divided among his children as a Christmas gift.

**Certificate of Physical and Mental Capacity in Marriage.**—The Bohemian Medical Society has had introduced into the Austro-Hungarian Reichstag a bill to regulate marriage by making a certificate of physical and mental capacity obligatory for candidates for matrimony.

**Italian in Medical Congress.**—Baccelli has declined an invitation to address the coming International Medical Congress at Madrid, on the ground that Italian is not recognized as one of the official languages. He appeals to his compatriots to hold aloof also from the Congress on this account.

**Death of Professor Loehlein.**—Germany has lost one of her most prominent and public-spirited gynecologists in Hermann Löhlein of Giessen. Science owes to him the introduction and scientific foundation of pelvic measurements, and innumerable contributions to the literature. He has been publishing regularly since 1890 some of his lectures, etc., under the title "Questions of the Day in Gynecology."

**The Centennial of the "Internat" in France.**—The internes of Paris have completed their arrangements for the celebration of the centennial of the founding of the system of internes in hospitals. It will occur during several days in the first week of April and will include a ceremonial assembly, banquet and dedication of the monument in the inner court of the Hotel Dieu to the memory of the internes who died victims of their professional devotion, of which many touching stories are told.

Dr. **A. Campbell Clark,** a leading British alienist, died, November 28, from influenza with visceral complications. He was well known from his contributions to psychiatric literature and especially as an expert on asylum management and construction. He was a pioneer in his country in the movement for the scientific training of attendants on the insane and was one of the authors of a practical treatise on the subject. His best-known work is "A Clinical Manual of Mental Diseases" published in 1897. His professional work was almost entirely in asylums, he having been connected with them since his graduation from the University of Edinburgh in 1886.

**Behring Proclaims the Successful Immunization of Cattle Against Tuberculosis.**—In his recent address at the Stockholm Academy of Sciences as the recipient of one of the Nobel prizes, Behring announced the success of his efforts to immunize cattle against tuberculosis. His method is similar to Pasteur's immunization of sheep against anthrax, that is, the injection of attenuated tubercle bacilli from man. The next step is to determine the minimal effective amount and reduce the expenses of this protective measure. He stated that he intends to devote the Nobel prize to this end. He announced that he considers himself justified in asserting even now, that the immunization of cattle against tuberculosis is an established fact.

## Correspondence.

### Hydrophobia Rabies and Dr. Dulles.

PHILADELPHIA, Dec. 17, 1901.

*To the Editor:*—In THE JOURNAL of Dec. 7, 1901, I note the following item: "*Rabies.*—Salmon's paper is a discussion and convincing analysis of the statistics, combating the statements of Dulles and others who argue that hydrophobia does not exist." Although I might despair of correcting the misapprehensions of persons who could attribute to me such an absurdity after reading any of my papers on the subject of rabies or hydrophobia, I will state, for the information of those who have not seen any of these papers and who might be excused for misunderstanding me, that I have never denied the existence of hydrophobia. I have repeatedly asserted in public and in print the position I have for years held, namely that the word "hydrophobia" should, for the present, be used as we use the word "convulsions," to describe a condition but without prejudice as to its cause. I published nearly eighteen years ago a paper in which I gave an account of the occurrence of this condition in more than thirty diseases, and I think it reasonable to ask that the profession would make itself acquainted with the facts of this nature which are within its reach before giving itself up to a theory, the adoption of which is about as bad, in my opinion, as giving oneself up to an exclusive dogma in practice, in that it fills its votaries with an unwarranted content with their present attainments and shuts them off from those open-minded and logical methods of investigation which alone can furnish the proper ground for a just appreciation of the work of others.

My idea is that we must first eliminate from our equation the large number of cases presenting the clinical picture of hydrophobia and afterwards study in a properly critical way what is left, and then we may find a definition of the word that will stand. At present the subject is obscured by much that is irrelevant, and certain disputants do not seem *(me judice)* to appreciate this sufficiently.

With due deference to those who regard my views as unsound, after twenty years of striving to learn the truth I am of the conviction that clinical hydrophobia in man and the disease in animals called rabies and judged by its inoculability in the un-natural way taught by Pasteur are not the same specifically. Of the former there are many causes besides the bites of animals suffering with rabies.

To the scientific arguments in Salmon's valuable and forceful paper I am now preparing a reply; for I think it contains some statements that would be better for decision of the premises on which they are founded. C. W. DULLES, M.D.

### Car Sanitation.

INDIANAPOLIS, Dec. 17, 1901.

*To the Editor:*—The dispatches announce that a new palace car company with a capital of $5,000,000 has been organized in New York. This company will, perforce, build new cars, and it seems to me now is the time for those members of the medical profession who believe in helping their fellowmen to emphatically demand proper ventilation, without draughts. Surely such a thing is possible. It is to lack of ventilation, to which must be attributed the coughs, catarrhs, colds and cases of pneumonia and grip which so frequently are acquired on sleeping cars. White blankets should also be furnished, so when they are soiled and dirty, the passenger, who is paying large dividend producing prices, will know it. The traveling public is very particular in regard to having white, clean sheets and pillow cases, but is singularly silent about the colored blankets which so frequently emit musty and bodily odors.

Then would it not also be a convenience and a distinct advanced step in car sanitation to adopt Dr. Fulton's suggestion and have special sinks in the toilet rooms over which the ablutions of the mouth could be performed? At present, the washings of the mouth and teeth and the voidance of oral excrement, during the process, are discharged into the wash basins. It would be a good thing also to do away with carpets and have rugs on rubber tiled floors. Rubber tiling is as beautiful as vitrified tile; it is impervious, furnishes a sure footing and will withstand the motion of the cars. Rugs could be taken out at any terminal and others put in which had been dusted, steamed and sterilized. What an improvement this would be over the dirt-stiffened, spit-soaked carpets now so much in evidence! There seems to be no substitute for plush. Leather is too cold and slippery, and cane is too hard, cold and also slippery. The best way to handle this matter would be to have the backs and bottoms of the seats removable; then they could be taken out, dusted with the air blast, and sterilized. How comfortable it would be to know that the plush of your sleeping-car section was even occasionally thoroughly dusted and sterilized. J. N. HURTY, M.D.

Secretary Indiana State Board of Health.

### Feeing the Nurse.

BISMARCK, N. D., Dec. 20, 1901.

*To the Editor:*—In THE JOURNAL of the 14th inst. you comment on what you evidently consider an undesirable innovation in medical practice in England, viz., the dividing of the fee, in obstetric cases, with the nurse. This is not by any means a new custom in England, nor is it attended by the evil results that might be anticipated; and if it could be carried out in some localities in this country many a practitioner would be glad to practice a system that would save any "booking" of obstetric fees.

Over twenty years ago I was an assistant to a general practitioner in the east end of London, and a large part of his practice consisted of obstetric work, in a rather poor part of the city. The usual fee for such cases was one guinea, 21 shillings, and it was the custom to hand the odd shilling to the nurse. On the physician's last visit to the case, usually on the tenth day after the confinement, the fee was handed to him *by the nurse* and he politely passed over the shilling. Even with patients who had accounts standing for other attendance it was customary to pay cash for labor cases and it was to the nurse's interest to keep patients posted in this respect because in case of failure she lost her "tip."

As the practice was common with all physicians it was no benefit to any particular one and was only a part of the almost universal system of "tipping" that prevails in most European countries.

F. R. SMITH, M.D.

### Appendectomy—Surgical History.

CINCINNATI, Dec. 16, 1901.

*To the Editor:*—I thank Dr. Frank Woodbury for calling my attention (THE JOURNAL, page 1620, Dec. 14, 1901) to Dr. Thomas G. Morton's case of appendectomy—April 23, 1887.

In my investigation Dr. Morton's case was overlooked. It is to be regretted. In this paper, as in all I present, honest criticism is coveted.

In the question of priority, I will say that Dr. Stemen of Fort Wayne, Ind., stated to me yesterday that he made a diagnosis of appendicitis, performed a celiotomy and removed the appendix during 1884.

I am indeed sorry that these facts did not appear in my paper.

Very truly,

B. MERRILL RICKETTS, M.D.

### Registration of Non-Resident Physicians Discontinued.

BOWLING GREEN, KY., Dec. 17, 1901.

*To the Editor:*—Since your recent publication giving the requirements of the various states for licenses to practice medicine this Board has been over-run with applications from all over the Union from physicians who do not expect to practice medicine in Kentucky at present, if ever. Our law makes no provision for the registration of non-resident physicians. For a time those living near our borders in adjoining states were permitted to register, but, upon the advice of our counsel, even this has been discontinued.

Very respectfully,

J. N. MCCORMACK, M.D.,
Secretary State Board of Health.

## Married.

HUGH J. DEATH, M.D., to Miss May Thirkield, both of Franklin, Ohio, December 11.

E. T. BOYD, M.D., to Miss Sadie E. Edwards, both of Leadville, Colo., December 12.

ALBERT B. DEERING, M.D., Boone, Iowa, to Miss Jean Miller, Cheyenne, Wyo., December 18.

JAMES C. CARTER, M.D., to Miss Corinne Greer, both of Knoxville, Tenn., December 17.

J. F. TAYLOR, M.D., Briggs, Texas, to Miss Ola Fowler, Meridian, Texas, December 22.

VIRGIL L. TUPPER, M.D., to Miss Mary H. Cranage, both of Bay City, Mich., December 12.

JOHN CASSEL BUCKWALTER, M.D., to Miss Edna Wright, both of St. Louis, December 23.

GEORGE B. NORBERG, M.D., to Miss Janette Lockwood, both of Kansas City, Mo., December 11.

GEORGE E. MARTIN, M.D., Anna, Ohio, to Miss Anna Williamson of Sidney, Ohio, December 17.

CHARLES C. MOFFETT, M.D., Lorain, Ohio, to Miss Elsie Long, of Elyria, Ohio, December 19.

WILLIAM E. SAWYER, M.D., St. Louis, Mo., to Miss Irene Borders of Sparta, Ill., December 18.

DAVID CHARLES STRONG, M.D., Wichita, Wan., to Miss Mary Alice Glenn of Chicago, December 25.

G. C. TRUEHART TAYLOR, M.D., to Miss Bernice Stephenson, at Huntington, W. Va., December 11.

JOHN R. PIPES, M.D., Avon, Ohio, to Miss Carrie K. Williams of Cleveland, Ohio, December 11.

CHARLES A. ELLIS, M.D., Sherman, N. Y., to Miss Alice Miles, at Buffalo, N. Y., December 15.

JOHN WILLIAM COE, M.D., New York City, to Miss Mamie Clark of Lexington, Ky., December 25.

AUGUST FREDERICK LEMKE, M.D., to Miss Jessie Josephine Stewart, both of Chicago, December 21.

W. J. LONERGAN, M.D., Princeton, Wis., to Miss Anna Hafer of Marshfield, Wis., November 8.

ROBERT B. PEARSON, M.D., to Miss Lucelia W. Lippincott, both of Bonaparte, Iowa, December 11.

PAUL JOSEPH GELPI, M.D., to Miss Marie Annette Hincks, both of New Orleans, La., December 26.

LOUIS F. WEAVER, M.D., Syracuse, N. Y., to Miss Emma A. Hubel of Woodstoke, Ont., December 16.

LYNN HARRISON, M.D., Butler, Ind., to Miss Effie A. Baldwin of Conandaigua, Mich., December 11.

J. J. YATES, M.D., Roberson Fork, Tenn., to Miss Anna Pickens of Mooresville, Tenn., December 9.

JAMES F. KENDRICK, M.D., West Charleston, Vt., to Miss Rose Sherburne of Glover, Vt., December 4.

J. EDGAR WHEAT, M.D., Fernando, Cal., to Miss Luna Murphy of East Los Angeles, Cal., December 4.

ESTELLE H. HENDERSON, M.D., Newbern, Va., to Miss Loula Wallace of Pulaski City, Va., November 27.

OTIS W. MILLER, M.D., to Miss Helen M. Sahn, both of St. Louis, Mo., at Clayton, Mo., December 23.

HUGH A. BARBEE, M.D., Point Pleasant, Pa., to Miss Mary Esther Byers of Pittsburg, Pa., December 18.

ANDREW HARSCHER, M.D., to Miss Louise Ludwig, both of St. Louis, Mo., at Clayton, Mo., December 18.

HUGH LIVINGSTON, M.D., Hopkinton, Iowa, to Miss Hattie Stewart of New Hartford, Iowa, December 17.

SAMUEL E. LLOYD, M.D., to Miss Regina Bowen, both of Towson, Baltimore County, Md., December 11.

ROSCOE A. CARTER, M.D., Lynden Center, Vt., to Miss Grace Mae Densmore of St. Johnsbury, Vt., December 10.

CHARLES R. GRAHAM, M.D., Tullahoma, Tenn., to Miss Minnie Lee Jacobs of Murfreesboro, Tenn., December 11.

JOHN BRADFORD WATERS, M.D., Hartford, Conn., to Miss Edith Mills Decker of New York City, December 18.

W. C. MEHARG, M.D., Grayton, Ala., to Miss Zula, daughter of Dr. Philip H. Brothers, of Zula, Ala., December 5.

WILLIAM CARVER, M.D., son of Dr. Joseph B. Carver, to Miss Lillian Bacon, both of Fort Scott, Kan., December 10.

HENRY HARRINGTON JANEWAY, M.D., New Brunswick, N. J., to Miss Elizabeth, daughter of Dr. L. Duncan Bulkley, New York City, December 23.

## Deaths and Obituaries.

**George Bayles, M.D.** College of Physicians and Surgeons, New York City, 1859, died at his home in Orange, N. J., December 20, from heart failure, after an illness of two days, aged 65. On the outbreak of the Civil war Dr. Bayles offered his services to the government and was appointed assistant surgeon. He served throughout the war, and at its close held the rank of major and surgeon. He was made sanitary inspector of Lexington, Ky., and later inspector of children's diseases for the New York Board of Health. In 1879 he moved to Orange, N. J. He became a member of the New York Academy of Medicine in 1867, was a member of the American Medical Association, Orange Mountain Medical Society, a member and ex-president of the Essex District Medical Society and a member of the New Jersey State Medical Society. During the Spanish-American war he served as post surgeon at Fort Hancock.

**Donald S. Campbell, M.D.** University of Michigan, 1877, a prominent physician and specialist on diseases of the ear, nose, throat and lungs, died at the Detroit Sanatorium, December 17, from typhoid fever, after an illness of three weeks, aged 44. After his graduation, Dr. Campbell studied four years in Scotland and England, and in 1883 was a member of the Greeley relief expedition to the Arctic. In 1885 he settled in Detroit. He was a member of the Detroit Medical Society, Michigan State Medical Society, American Electro-Therapeutic Association and of the American Medical Association.

**Rush S. Huidekoper, M.D.** University of Pennsylvania, Philadelphia, 1877, died at Philadelphia, December 17, after an operation for inflammatory chest disease, aged 47. He gained prominence by reason of his successful fight in the United States Senate for an organized veterinary service for the United States Army. In 1898 he was appointed chief surgeon of the First Army Corps with the rank of lieutenant-colonel, was stationed at Chickamauga, and was prominent in the "embalmed" beef investigation.

**J. Milton Hadley, M.D.** University of Pennsylvania, Philadelphia, 1860, who served throughout the Civil war as a surgeon on the Confederate side, and thereafter practiced two years in Oakes, Orange County, N. C. He moved to La Grange in 1867 and died at his home in the latter place, December 13, aged 65. He was one of the organizers of the Lenoir County Medical Association, and at one time its president, and a member and vice-president of the State Medical Society.

**Richard L. Butt, M.D.** New York University, 1846, died at his home in Midway, Ala., December 18, after an illness of 18 months, aged 77. He served as surgeon during the Civil war on the staffs of Generals Jackson, Van Dorn and Forest. At the close of the war he practiced in Memphis, Tenn., but in 1875 moved to Midway. He had been a member of the national and state medical associations, and was once president of the Bullock County Medical Society.

**Caleb Du Hadway, M.D.** Missouri Medical College, St. Louis, Mo., 1867, who had practiced in Jersey County, Ill., ever since his graduation, died at his home in Jerseyville, December 21, from paralysis, aged 68. He was a surgeon in the Confederate service for two years, a member and some time president of the Jersey County Medical Society, and is credited with being the discoverer of the anesthetic properties of carbolic acid.

**William E. Bowman, M.D.** Rush Medical College, Chicago, 1886, a prominent physician of Elkhart, Ind., was instantly killed, December 18. He was driving home from a professional call at Bremen, Ind., and while crossing the tracks of the Lake Shore road at Mishawaka, his buggy was struck by the fast mail and he and his driver instantly killed. Dr. Bowman had resided in Elkhart for fifteen years. He was 38 years old.

Fred **James Perry, M.D.** Rush Medical College, Chicago, 1892, one of the most prominent physicians of Fort Atkinson, Wis., died at St. Joseph's Hospital, Milwaukee, December 19, from appendicitis, for which an operation was performed a week previous. He was a member of the Central District and State Medical Societies and of the American Medical Association. He was 36 years of age.

**Jesse Groome Shoemaker, M.D.** University of Pennsylvania, Philadelphia, 1886, prominent as a citizen and practitioner of Phoenixville, Pa., died at his home in that place, December 14, after a lingering illness, aged 35. He was president of the Phoenixville Hospital and a member of the State Board of Health and the Chester County Medical Society.

**Nelson E. Jones, M.D.** Western Reserve University, Cleveland, 1846, the oldest practitioner of Pickaway County, Ohio, died at his home in Circleville, from uremia after a long illness, December 15, aged 80. He served as surgeon of the Board of Enrollment for the Twelfth Ohio District through the Civil War and thereafter served on the pension examining board.

**Salmon Hudson, M.D.** Starling Medical College, Columbus, Ohio, 1862, one of the oldest and best-known physicians of Medina County, died at his home in Medina, Ohio, December 11, from paralysis, after an illness of three years, aged 81. During the Civil war he served as assistant surgeon in the 23d and 11th Ohio Volunteer Infantry.

**James R. Deane, M.D.** Medical School of Maine, Bowdoin College, Brunswick, 1860, assistant surgeon in the Navy during the Civil war and for a quarter of a century an esteemed practitioner of Newton Highlands, Mass., died December 6 at his home, after a protracted illness, aged 68. He was a member of the Massachusetts Medical Society.

**William Hilleary Johnson, M.D.** University of Maryland, Baltimore, 1849, died at his home in Adamstown, Frederick County, Md., after a long illness, December 13, aged 74. He was a surgeon in the Confederate service during the Civil war, and since its close had resided and practiced in Adamstown until his retirement in 1899.

**James Sawyer, M.D.** Medical School of Maine, Brunswick, 1846, formerly a member of the state legislature, from which he resigned to serve as surgeon throughout the Civil war, and thereafter a practitioner in Biddeford, Maine, died at his home in that place after an illness of two days, from paralysis, December 18, aged 79.

**De Witt J. Jordan, M.D.** Kentucky School of Medicine, Louisville, 1892, who recently moved from Indianapolis to Anderson, Ind., was frozen to death in a snowstorm, near Rosedale, Ind., while making a professional call, December 13. He was 30 years old and was a member of the American Medical Association.

**James W. Smith, M.D.** Berkshire Medical College, Pittsfield, Mass., 1847, the oldest practicing physician in Ohio, died at his home in Wellington, December 10, from paralysis, after an illness of ten days, aged 80. He served with distinction throughout the Civil war, and at its close held the rank of colonel.

**John C. Mayfield, M.D.** Tulane University, New Orleans, La., 1874, state quarantine officer at Galveston, Texas, for the past five years, and previously a practitioner at Velasco, Columbia and Richmond in that state, died at San Antonio, December 19, from kidney disease, after a protracted illness, aged 51.

**Peter Drayer, M.D.** Starling Medical College, Columbus, Ohio, 1867, one of the most prominent and oldest physicians of Eastern Indiana, for 35 years a resident of Hartford City, died from consumption at his home in that city, December 20, aged 61. He was a member of the American Medical Association.

**James Henry Munn, M.D.** Louisville (Ky.) Medical College, 1887, one of the most prominent physicians of Florence County, S. C., and a member of the American Medical Association, died at his home in Hyman, December 7, after an illness of several weeks, from acute pulmonic phthisis, aged 38.

**John Stark, M.D.** University of Glasgow, Scotland, 1863, a widely-known physician of Kansas City, Mo., and during the Civil war a surgeon on the staff of Gen. George B. McClellan, died at his home in Kansas City, December 17, from pneumonia after an illness of eight days, aged 60.

**Daniel McFarlane, M.D.** Edinburgh, Scotland, 1864, prominent and beloved as a practitioner for nearly 30 years in Keola, Iowa, died while attending a patient, near that town, December 10, from heart disease, aged 60. He was a member of the American Medical Association.

**James R. Deane, M.D.** Medical School of Maine, Bowdoin College, Brunswick, 1860, assistant surgeon in the Navy during the Civil war and for a quarter of a century an esteemed practitioner of Newton Highlands, Mass., died December 6 at his home, after a short illness.

**Robert W. Tate, M.D.** Long Island College Hospital, Brooklyn, for thirteen years a practitioner in Greensboro, N. C., and once vice-president of the North Carolina Medical Society, died at his home in Chadbourn, N. C., November 29.

**James Kent Harper Jacobs, M.D.** University of Maryland, Baltimore, 1897, died suddenly at Centreville, Queen Ann's County, Md., December 18, aged 45. He practiced at Kennedysville, Kent County, until 1897, when he removed to Centreville.

**Alexander Jackson, M.D.** Harvard University Medical School, Boston, 1843, a prominent physician of Plymouth,

Mass., from his graduation until his retirement in 1890, died at the home of his son in Boston, December 12, aged 82.

**Benjamin F. Kibler, M.D.** University of Maryland, Baltimore, 1880, died at his residence in Dayton, Rockingham County, Va., from consumption, after a long illness, December 8. He had practiced in Dayton for about fifteen years.

**William J. McConkey, M.D.** University of Glasgow, Scotland, 1854, who had practiced thirty years in Mapleton, Ohio, and then moved to Canton, died at his home in that city from cancer of the stomach, December 5, aged 70.

**George Bridges Henshaw, M.D.** Harvard University, Boston, 1894, formerly bacteriologist to the Cambridge Board of Health, and a practicing physician of Cambridge, Mass., died at New Rochelle, N. Y., December 19.

**Nicholas J. Wilson, M.D.** University of Nashville, Tenn., 1860, died at his home in Byhalla, Miss., December 10, after a brief illness, aged 67. He had practiced medicine in and around Byhalla for more than forty years.

**Lucius L. Wakefield, M.D.** Rush Medical College, Chicago, 1863, one of the best-known physicians of Central Illinois, died at his home in Summum, December 23, aged 66. He leaves an estate valued at $100,000.

**Ephraim F. Leake, M.D.** University of Pennsylvania, Philadelphia, 1845, who had practiced medicine in Frankford, Philadelphia, since 1847, died at his home in that city, December 13, after a short illness, aged 80.

**Levi M. Dixon, M.D.** Missouri Medical College, St. Louis, 1867, for many years a practitioner in Nevada and Vernon County, Mo., died from tuberculosis at his home in Nevada, December 11, after a prolonged illness.

**Robert W. Murphy, M.D.** Bellevue Hospital Medical College, New York, 1871, a California pioneer, and for many years a practitioner in San Francisco, Cal., died at his home in that city, December 7, aged 80.

**Frederick J. Murdock, M.D.** Kansas City Medical College, 1891, a practitioner of Kansas City, Mo., died December 23, at St. Joseph's Hospital, Kansas City, after an illness of one week, from meningitis, aged 45.

**Thomas Waterman, M.D.** Harvard Medical School, Boston, 1868, known as an expert on insanity, died at his home in Boston, December 14, from heart failure following an operation on the throat, aged 59.

**John W. Runcie, M.D.** Jefferson Medical College, 1871, an old and respected physician and citizen of Fort Branch, Ind., died at his home in that place, December 17, from cerebral hemorrhage, aged 74.

**Peter Mehring, M.D.** Washington University, St. Louis, Mo., 1879, for twenty years a practitioner of Portage des Sioux, Mo., died, December 19, at his home in that place from pneumonia, aged 59.

**Everett J. Whitehead, M.D.** University of Michigan, Ann Arbor, 1890, of Columbus, Ohio, died at Kaneth, Va., where he had gone to nurse a sick brother, from pneumonia, December 17, aged 42.

**Wiley Elias Gainey, M.D.** Grant University, Chattanooga, Tenn., 1893, an esteemed physician of Mayo, Fla., died at his home in that place from bronchitis after a long illness, December 15.

**John H. Bell, M.D.** New York University, 1865, one of the best-known physicians of Southwest Michigan, and once mayor of Benton Harbor, Mich., died at his home in that city, December 29.

**Elias P. Ileff, M.D.** Long Island College Hospital, Brooklyn, 1877, a successful practitioner of Newark, N. J., died at his home in Newark, N. J., December 22, after an illness extending over a year.

**Andrew Gilroy, M.D.** University of Vermont, Burlington, 1884, a practitioner of Jewett City, Conn., died at the home of his mother in Norwich, Conn., from consumption, December 12, aged 38.

**Conrad J. Crounse, M.D.** Albany Medical College, 1846, who had practiced in Clarkesville, N. Y., for more than 45 years, died at his home in that place, December 12, aged 79.

**George W. Akard, M.D.** University of Tennessee, Nashville, 1888, a practitioner of Springtown, Parker County, Texas, died suddenly at Weatherford, Texas, December 19.

**C. H. Kermott, M.D.,** for the past twelve years agency physician at Fort Totten, N. D., died December 11, at his residence in Fort Totten, from pneumonia, aged 65.

**Orrin E. Miner, M.D.** New York University, 1859, the oldest physician in Noank, Conn., died at his home in that village, December 22, after a lingering illness.

**Alfred S. Wiley, M.D.** Dartmouth Medical College, Hanover, N. H., 1888, died from typhoid fever, at his home in Newton Highlands, Mass., December 20.

**Loretta J. Pettit Baird, M.D.** University of Minnesota, Minneapolis, 1894, died suddenly from embolism at her home in Rushmore, Minn., December 17.

**Hiram Leonard Ives, M.D.** Albany Medical College, died at the Samaritan Hospital, Troy, N. Y., December 17, from pleuro-pneumonia, aged 62.

**Green R. Price, M.D.** Grant University, Chattanooga, Tenn., 1894, died suddenly at his home in Waco, Ga., December 20, from heart disease.

**John B. Fella, M.D.,** Wurzburg, died at his home in Toledo, Ohio, after a lingering illness from bronchial phthisis, December 14, aged 67.

**Clinton S. Chase, M.D.** Castleton (Vt.) Medical College, 1854, died from pneumonia at his home in Detroit, December 15, aged 70.

**John F. Bigelow, M.D.** Rush Medical College, Chicago, 1882, died at Cook County Hospital, December 28, from pneumonia.

**George E. Dixon, M.D.** University of Vermont, Burlington, 1892, died at his home in Milton, Vt., December 20.

**William S. Barrickman, M.D.,** Fairfield, Ill., died at his home in that place, December 17.

## Book Notices.

THE PRINCIPLES OF PATHOLOGICAL HISTOLOGY. By Harvey R. Gaylord, M.D., and Ludwig Aschoff, M.D., with an introductory note by William H. Welch, M.D. Quarto, 354 pages, with 81 Engravings in the Text and 40 Plates. Cloth, $7.50. Philadelphia and New York: Lea Brothers & Co.

The handsome volume before us is worthy of more than a casual review. The authors have prepared an atlas covering the ground of a good course in practical microscopic pathology of the special organs, accompanied by descriptive text. The volume is divided into three parts: 1. Microscopic Technique; 2. Pathological Histology of Organs; 3. The Principles of Optics and Photomicrography.

In Part I, there is a general introduction with regard to care in the use of the microscope. This is followed by a description of the methods for the manipulation of fresh material and later of the methods for the preparation of hardened material. The whole section on technique has been well done. The authors have been liberal with regard to the number of methods recommended, and while in a volume of this size and scope it is scarcely possible to include all, or even the good methods, yet very few of the better technical procedures will be found to be lacking. We should have been glad to have found more emphasis laid upon the use of the dissecting microscope—the hand-lens; to have seen mention made of Bardeen's freezing microtome; to have had Weigert's method of neuroglia staining described as well as Mallory's; to have seen the original Nissl method and Held's modification of it introduced, and to have had some attention paid to the very important work of Fischer on the fixation and staining of protoplasm. (It is mentioned in a foot-note only.)

The second part, which comprises almost three-quarters of the whole volume, is the part to which the reviewer's attention must be more particularly directed. Without preamble, the structure and pathologic alterations of heart muscle are taken up, and this is followed successively by similar treatment of the skeletal muscles, liver, kidney, pancreas, lung, mucous membranes, serous membranes, vascular system, lymph nodes, spleen, genital organs, tumors and blood. Just what has de-

termined the order of presentation does not seem clear, as the arrangement of topics in the series scarcely corresponds to any of the ordinary sequences of description or consideration. Under each heading, a series of characteristic pathologic changes are considered by number, each number apparently corresponding to a section given out in the microscopic course. Thus, under heart muscle, we find specimens of the following lesions described: 1, fatty degeneration; 2, invasion of the heart muscle by fat cells; 3, parenchymatous degeneration (cloudy swelling); 4, brown atrophy; 5, abscess in the heart muscle; 6, myocarditis chronica fibrosa; 7, tuberculosis of the heart muscle; 8, fragmentation of the myocardium. Of these eight specimens described, five are illustrated by photomicrographs.

The treatment of the various topics is very much like that accorded them in the better courses in pathologic histology in this country and in Germany. The choice of subjects conforms very closely to that met with in such courses. We are not struck by any particularly new features, nor is one impressed by the absence of typical preparations usually described.

Each topic is preceded by a very brief epitome, dealing with the normal structure of the part—a feature which, it may be remembered, is characteristic of Orth's text-book. There is something to be said in favor of such an introduction, but much depends upon the way it is made. Now that we have such excellent text-books upon normal histology and microscopic anatomy, and now that in all good medical schools very fair courses upon the normal structure are given to students before they approach the subject of pathology, there no longer exists that need that previously obtained for a description of normal structures given in a text-book on pathology. The descriptions given in Orth's book were of particular value, because they emphasized especially those features of normal structure and of normal relations which were of unusual significance for the explanation of pathologic changes in the organ. No attempt, however, was made by Orth in his text-book to give a full description of normal structures. Indeed, his remarks were limited chiefly to hints with regard to the normal from the pathologist's view-point—hints at relations which the teacher of normal histology or microscopic anatomy, unless he were a pathologist, would be likely to overlook. Gaylord and Aschoff have, it seems to us, missed this point entirely. The descriptions they give of normal structure are brief general descriptions, such as might be given to the most elementary class in normal microscopic work. These descriptions are utterly inadequate for the medical student who is approaching modern pathology. They are sure to be criticised severely by students who have taken good courses on the microscopic structure of normal organs, and to insufficiently prepared students they can only be misleading for they will yield the impression that the normal descriptions here to be found are adequate as knowledge preliminary to the study of diseased organs. Some of these descriptions of normal structure are more unfortunate than others. The descriptions of the kidney, lung and bone marrow are very poor. In the remarks on the normal structure of the intestines, the solitary follicles are not distinguished from Peyer's patches; Auerbach's plexus is mentioned, but nothing is said of Meissner's; the astonishing remark is made, on p. 162, that "the mucosa of the small intestine is thrown into more or less regular transverse folds, the villi." In the description of the lymph gland, where lymph cord is intended, the authors use the expression "radiating structures of lymphocytes." In the description of the tracts of the central nervous system, we find the statement that "the anterior pyramidal tracts are composed of motor fibers from the ganglion cells of the anterior horns of the same or opposite side" (!) On page 214 the impression is given that Marchi's method and the Weigert-Pal method may be used indiscriminately for demonstrating degenerated tracts, nothing being said about the use of the two methods in different stages of degeneration.

The text of the descriptions of pathologic lesions themselves is better, and in general may be considered as brief but adequate. The descriptions of pathologic lesions in the lung are particularly good; the section on arteriosclerosis is also good. The specimens from the genital organs are well chosen, and, as a rule, well described. The section on tumors is certainly one of the best parts of the book. The descriptions are modern, clear, and, so far as tested, accurate. Gaylord's views on the etiology of carcinoma are developed with reserve, and the bibliography is reviewed with a special reference to parasitic origin.

The section on the blood, written by Lyon, is exceptionally good. Seldom have we seen compressed into such narrow limits so many data on the pathology of the blood. On the other hand, the section on the nervous system is so fragmentary and so superficial that it would have been much better to have omitted it altogether. The description of the lesions in dysentery is also insufficient. The distinction between amebic and other forms is mentioned, but the characterization of the lesions in the different types has been overlooked. The same is true with regard to abscesses of the liver. The local reaction in so-called amebic abscesses is quite different from that to be met with in true abscess, due to pyogenic bacteria.

The illustrations in the book—and these are undoubtedly the principal feature of the publication—consist in large part of photomicrographs reproduced by the heliotype process, and here it is a pleasure to testify to the complete success of the photographs and their reproduction. We know of no similar aggregation of photomicrographs covering this ground, and rejoice that such a collection as those to be found in the book before us is now available to students. The subjects have been evidently very carefully chosen, and suitable powers of magnification have been employed. In a majority of instances the details are sharp. This is especially true if a hand-lens be used to examine the heliotype reproductions. The authors have been wise in making a majority of the photographs with low amplification. Photography does not yet yield such good results with high powers as it does with low. In a few instances the effects would have been much better had better specimens been available for the photograph. One can easily see that the fixation has been imperfect in some of the preparations. But pathology is not like normal microscopic anatomy. One can not multiply preparations at will, but must avail himself of those which come into his hands. The legends to the figures have been carefully written and are very helpful as explanations. The photographs are supplemented by a number of lithographic plates.

If the atlas had been published as a series of plates with legends, and the text omitted, there would have been but little to criticise. As it is, the errors in the text may easily be corrected in a subsequent edition, when, no doubt, also, the typographical errors met with will disappear. We notice, among others, "Erlich" for "Ehrlich;" iodine" for iodide;" "Friedlander" for "Friedländer;" "Lowit" for "Löwit;" "Stohr" for "Stöhr;" "lumenæ" instead of "lumina;" "thrombus and embolen" instead of "thrombosis and embolism;" "Marschalkz" for "Marschalko."

The terminal section of the volume deals with the principles of optics and photomicrography. It will be welcomed by those who wish to do practical work in this interesting field. Full directions for setting up photomicrographic apparatus, for supplying the source of light and for the arrangement of filters, are given. Hints as to the kinds of photographic plates to employ, modes of developing the plate, and the method of making lantern slides are successively dealt with. There is a short note on tricolor photography—a method which has been employed to a very slight extent in the illustration of the volume before us. The results, as judged by plates XXXVA and XXXVB do not warrant any very extensive use of this method at present. While we have frankly pointed out the defects of this volume, we do not wish to leave too unfavorable an impression of it. Students who seek a guide for the laboratory work in a course in pathologic histology may be helped by the illustrations in this volume of Gaylord and Aschoff.

THE CENTURY BOOK FOR MOTHERS. A Practical Guide in the Rearing of Healthy Children. By Leroy Milton Yale, M.D., Formerly Lecturer on the Diseases of Children at Bellevue Hospital Medical College, New York; and Gustav Pollak, Editor of "Babyhood." Cloth. Pp. 461. Price, $2.00 net. New York: The Century Co. 1901.

The scope of this work is advice to the prospective mother before her babe is born, and for the care of her child through

its infancy. The chapter on Preparation for Motherhood is brief but sensible and practical, including diet, dress, exercise, care of the breasts, selection of the nurse, outfit for the lying-in chamber, for the baby basket, etc. This is followed by chapters on the nursery, the baby's bath, hours of sleeping, feeding, air and exercise, dress, growth and development, disorders from improper feeding, evidences of illness and domestic treatment. The latter includes the simplest of remedies and remedial measures, how to give medicines, nursery emergencies, etc. The above is but a brief outline of what appears in part one. In part two are considered all the various ailments to which children are subject. The method adopted in this part is peculiar, certainly practical, although not systematic. It is in the form of replies to queries sent by mothers to the authors while they were editors of the magazine *Babyhood*. The queries cover all the perplexities of daily nursery life and include every simple ailment. The answers are full, sensible, and all that could be desired to satisfy the most querulous and anxious mother. The advice and directions given are just what might be expected from a conscientious scientific physician to one of his patients. The language used is free from dogmatism, simple in style, and void of technicalities. The object, as stated by the author, is to help the intelligent mother to become the alert and judicious guardian of the nursery rather than to tempt her to play the part of the physician and to dabble in dosing. The book is one that can be conscientiously recommended to a young mother by her physician. We know of none that is so thoroughly satisfactory in every way and we only wish there were more of such books to put into the hands of the laity.

## Miscellany.

**Pasteur Treatment of Hydrophobia in Mexico.**—The last *Boletin* of the Mexican National Board of Health reports that since the Pasteur treatment of hydrophobia was introduced in 1888, 4000 persons have been treated. The total mortality has been only 3 per 1000.

**Medal for Fornier.**—Professor Fournier of Paris relinquishes his clinic at the Hospital Saint Louis with the present scholastic year. His friends intend to present him with a medal; subscriptions are received by Dr. Rueff, 106 Boulevard Saint Germain, Paris. A subscription of 25 francs or $5, entitles one to a copy of the medal.

**Mechanical Cure of Fetid Atrophying Rhinitis.**—In order to induce proliferation at the atrophying points, Flatau implanted a row of ivory pegs at the point of insertion of the lower turbinal in two cases of fetid, atrophying rhinitis. The results were evident in the course of a few months; the bone had increased in size and the secretions had altered their nature, with almost complete cure in two years. He states in his communication to *Deutsche Praxis*, 1900, 12, that the implanting of the pegs after spraying with hydrogen dioxid and submucous injection of cocain, was a very simple operation.

**Wiring an Aortic Aneurysm.**—Dr. J. M. T. Finney operated on an aneurysm of the arch of the aorta by wiring and electricity at the Good Samaritan Hospital, December 8. The patient, a mulatto, aged 41, had a large pulsating globular mass projecting forward in the upper sternal region. A large aspirating needle lacquered to near its point was thrust first horizontally through the skin over the tumor, then turned perpendicularly and thrust directly down until blood began to flow through it. A wire coiled on a spool was then passed in through the needle until 10 feet had entered. Then a galvanic current of 9.5 milliamperes was passed through it, the negative pole being over the back, the positive connected with the end of the wire. The current was passed for one hour, the blood flow ceasing as soon as the connection was made. The patient felt no pain, being anesthetized with cocain. Dr. F. says 44 cases have been operated on by this method, the recoveries being one in five. He has had 2 recoveries in 9 cases. The wire which he uses consists of 30 parts of copper and 1000 of silver. He prefers the mild current for an hour rather than a strong one for a few minutes. The patient is doing well up to the present (December 14). After using the current the needle was withdrawn, the wire cut off near the surface and its end pushed under the skin.

**Counter-Irritation in Southern Luzon.**—The following letter and photograph recently received by the Surgeon-General of the Army is published as an item of interest relating to primitive medical practice among the natives of the Department of Southern Luzon:

TABACO, ALBAY, P. I., Oct. 20, 1901.

*Chief Surgeon, Neura Caceres:*—I have the honor to forward the enclosed photograph to illustrate the peculiar Bicol practice known as *Tangkong*. This skin stretching is quite universally practiced among the Bicols and while it obtains more generally among the poorer classes I have occasionally seen a suspicious bump on the back of the neck of even high caste Filipinos. The elevations observed in the picture are the result of repeated stretchings of the skin and I have seen instances where the hypertrophy was so pronounced as to resemble the mammæ of an ordinary girl at puberty. The operation is performed by grasping the skin of the back of the neck firmly between the semi-flexed index and middle fingers, drawing it out as far as possible and letting go again and again. As the skin is successively stretched it becomes quite elastic and when it becomes very sensitive a strong salt solution is applied and the operation is repeated. It is used as a general cure-all, but its greatest virtue lies in the relief it affords in severe headache. One can readily understand that such would be the case, since it is nothing more or less than counter-irritation, but why a whole nation should employ such a method until the resulting hypertrophy of the connective tissue has made the tangkong almost as permanent a feature of these people as their dark skin or straight hair is hard to explain. The operation is usually practiced by the *Parabolong*, as the native medicine man is called, but not necessarily so, as any one can do it. Leeching, cupping, the application of cataplasms or vesicants and the employment of the scarificator are general procedures in most diseases and the sick Filipino is fortunate if he escapes having at least one of these practiced upon him, even while employing one of the more intelligent native physicians. I have seen native prisoners with hundreds of scars from scarification upon their bodies. The accompanying photograph was taken of a number of prisoners of war, selected at random from a company, every member of which showed some evidence of having submitted to the process. Surgeons in the Philippines must have noticed this matter and probably know more of it than I am able to tell, but I merely describe it in order to enrich the archives of the Department of Southern Luzon.

GEORGE A. ZELLER,
Capt., Asst. Surg., U. S. V.

# Societies.

**Memphis (Tenn.) Medical Society.**—This Society met, December 17, and elected the following officers: Dr. Alfred Moore, president; Dr. Edwin Williams, vice-president; Dr. James L. Barton, secretary and treasurer.

**Weber County (Utah) Medical Society.**—At the regular meeting of this Society the following officers were elected for 1902: Dr. Chester E. Coulter, president; Dr. Amasa S. Coudou, vice-president; Dr. George A. Dixon, treasurer; Dr. Harry B. Forbes, secretary, and Dr. James M. Harris, librarian.

**Pulaski County (Ill.) Medical Association.**—This Association met for organization at Mound City, and elected Dr. Marcus L. Winstead, Wetaug, president; Dr. John F. Hargan, Mound City, vice-president, and Dr. Charles J. Boswell, Beechwood, secretary and treasurer.

**Hamilton (Ontario) Medical Association.**—At the annual meeting of this body, held December 6, the following officers were re-elected: Dr. Robert R. Wallace, president; Dr. Edward B. O'Reilly, vice-president; Dr. Walter Langrill, treasurer; Dr. W. Crawford, corresponding secretary, and Dr. Warren White, recording secretary.

**Tri-State Medical Association of the Carolinas and Virginia.**—The fourth annual meeting of this Association will be called to order in Asheville, N. C., February 25. All fellows intending to read papers will please communicate with the secretary, Dr. Hubert A. Royster, Raleigh, N. C., giving title, not later than January 15.

**Orleans Parish (La.) Medical Society.**—At the annual meeting of this Society, December 14, the following officers were elected: Dr. Hermann B. Gessner, president; Dr. Albert Graner, Dr. Sidney P. Delaup, and Dr. Gordon King, vice-presidents; Dr. I. I. Lemann, recording secretary; Dr. Jacob A. Storck, librarian, and Dr. William H. Seemann, treasurer.

**New York Academy of Medicine.**—Dr. V. P. Gibney has been elected vice-president; Dr. Walter Lester Carr, a member of the Committee on Admissions, and Dr. Walter B. James a member of the Committee on Library. In the Section on Laryngology and Rhinology, Dr. Emil Mayer has been elected chairman, and Dr. Z. L. Leonard, secretary of this Section.

**Allen County (Ind.) Medical Society.**—The annual meeting of this Society was held at Fort Wayne, Ind., December 23. Dr. W. A. Evans, Chicago, delivered an address on the "Economic Relations of Tuberculosis." The following officers were elected: Dr. Samuel H. Havice, president; Dr. Elmer E. Morgan, secretary; Dr. William P. Whery, treasurer, and Drs. George L. Greenawalt, George B. M. Bower and Budd Van Sweringen, censors, all of Fort Wayne.

**Alexander County (Ill.) Medical Association.**—The physicians of Alexander County met at Cairo, December 17, and organized this Society with the following officers: Dr. Samuel B. Cary, president; Dr. James W. Dunn, vice-president; Dr. John T. Walsh, secretary and treasurer, and Drs. Alpheus A. Bondurant, James H. Oakley and James McManus, censors, all of Cairo. The first regular meeting will be held in January, and the annual meeting in April.

**Oklahoma County (Okla.) Medical Association.**—This Association was organized December 4. At its second meeting, December 11, by-laws and constitution were adopted and a paper on "Penetrating Wounds" by Dr. R. D. Long, Oklahoma City, was read. The society will meet semi-monthly in Carnegie Library, Oklahoma City. Its officers are: Dr. Claudius B. Bradford, president; Dr. R. D. Long, vice-president, and A. D. Young, secretary and treasurer.

**Tri-State Medical Association.**—The Tri-State Medical Association of Western Maryland, West Virginia and Western Pennsylvania, met in semi-annual session at Cumberland, Md., December 19. Papers were read as follows: "The Radical Cure of Hernia," Dr. R. W. Stewart, Pittsburg; "The Medical Side of Surgical Cases," Dr. I. N. Love, New York; "Incipient Tuberculosis," Dr. C. C. Johnston, Pittsburg; "Uremia," Dr. C. C. Jacobs, Frosburg; "Pneumonia," Dr. A. F. Speicher, Elk Lick, Pa. A banquet followed.

**New York State Charities Aid Association.**—At the annual meeting of this Association held in New York during the past week, Dr. George G. Wheelock reported that the charities administration of the Borough of Manhattan had been improved by providing two salaried resident physicians for the insane pavilion at Bellevue Hospital. There was still need for the exclusion of pauper labor in the department, and a new building for Bellevue Hospital was urgently demanded. Reports from the county committees throughout the state showed a general improvement in the almshouses, but every state hospital is now caring for from 100 to 500 more inmates than can be properly accommodated.

## THE WESTERN SURGICAL AND GYNECOLOGICAL ASSOCIATION.

*Eleventh Annual Meeting, held in Chicago, Dec. 18 and 19, 1901.*

President, Dr. A. F. Jonas, Omaha, Neb., in the Chair.

An Address of Welcome was delivered by Dr. Alexander Hugh Ferguson, Chicago, to which an eloquent response was made by Dr. Joseph Eastman, Indianapolis.

### An Old Shoulder Dislocation, with Report of a Case.

DR. J. RUDIS-JICINSKY, Cedar Rapids, Iowa, read a paper with this title. The object of the author in making this report of an apparently simple case was to show what the *x*-ray could do for the profession in the investigation of luxations, fractures, and in observations of the growth of the callus, the bones themselves, etc., and to furnish an aid in the interpretation of the *x*-ray findings. Before one could interpret correctly the fluoroscopic image or the skiagraph of certain parts, when their relationships were altered by disease or trauma, he should have always before him a skiagraph picture of the normal parts, and of their normal relations. After taking all the other precautions of a proper technique into consideration, one could not go astray. Moreover, the eye would be prepared to take in much which would otherwise not be seen. The *x*-ray enabled one to determine through a plaster cast or other dressing the exact position of the fragments. After reporting a case at great length of an old shoulder luxation, the author dwelt upon the value of the *x*-ray in cases of fractures, etc.

DR. LEWIS SCHOOLER, Des Moines, Iowa, endorsed the value of the *x*-ray in old dislocations of the shoulder, especially in cases where the swelling was so great as to obscure some of the landmarks and render the diagnosis difficult by the usual method. While in nearly all cases the examining surgeon could make a diagnosis with satisfaction without the aid of the *x*-ray, yet it was a consolation to have one's diagnosis verified by a competent operator of the *x*-ray machine.

### Treatment of Irreducible Backward Dislocation of the Astragalus by Opening the Joint and Repositing the Same.

DR. W. JEPSON, Sioux City, Iowa, after detailing a case and going extensively into the literature of the subject, summarized his observations as follows: 1. His own experience and the results of recorded cases led him to believe that it would rarely be possible with present knowledge and technique to bring about a reduction of a backward dislocation of the astragalus without opening the joint and bringing about a reposition of the bone by direct manipulation. 2. With our present command of aseptic surgery he could see no reason why this should not be undertaken in all cases uncomplicated by severe infection, with good prospects of securing nearly a perfect result. 3. Removal of the astragalus should be reserved for such cases as where the bone was completely separated from its ligamentous attachments, consequently having no adequate source of blood supply. 4. If amputation be resorted to only when the dislocation was compound and infected to a degree impossible of removal, the patient's life was jeopardized by the septic intoxication or infection.

### Some Internal Injuries of the Knee Joint.

DR. M. L. HARRIS, Chicago, called attention to two varieties of injuries to the inner structures of this joint which, he believed, were more common than the attention heretofore given them would seem to indicate. These injuries might be produced in one of two ways: 1. By the direct application of force, as might occur in a fall upon the knee, or by the forcible impingement of a more or less pointed object against this

portion of the joint. 2. By pinching or crushing the apex of the mass in the angle between the femur and tibia, as might occur when these bones were slightly separated during hyperflexion or sudden wrenching. The cases narrated by the author illustrated the serious and persistent disablement that might occasionally result from comparatively slight pathologic changes affecting the inner structures of the knee joint, and showed the necessity of operative treatment in those cases following an injury in which the characteristic symptoms persisted after the usual treatment of the joint by rest and immobilization.

### Ankylosis of Joints.

DR. JOHN B. MURPHY, Chicago, recommended arthroplasty for the relief of ankylosis without destructive bone defects. Ankylosis and contractures were of three varieties: 1, atrophy of soft parts; 2, union (fibrous and bony) between joint surfaces; 3, a combination of one and two. The essayist referred to the experimental work of Chlumsky, of Würzburg, who decided that the best way to relieve such joints was to treat them precisely on the same basis as one would non-union of fractures from the interposition of foreign material between the fragments. He experimented with several kinds of material, absorbable and non-absorbable, to determine the best material to use, but finally abandoned the use of foreign materials and resorted to a plastic operation in the neighborhood of the joint for its relief. The method of Chlumsky was described, the essayist stating that he had adopted it in several cases with good results.

### Treatment of Dislocation of the Clavicle Through Open Wound.

DR. JAMES E. MOORE, Minneapolis, said that some recent writers had advocated the treatment of such a dislocation by wire suture, but he had been unable to find any literature upon the subject. Quite recently he had treated a case by cutting down upon the dislocated bone, replacing it and the surrounding soft parts, and fastening them there by means of silver wire and catgut sutures. The result was very satisfactory and the findings were instructive.

### Etiologic Factors in the Production of Tumors.

DR. GEORGE HALLEY, Kansas City, Mo., read this paper. No theory had been broad enough to account for all the phenomena characteristic of benign or malignant tumors. Inflammatory conditions that almost invariably produced some kind of tumefaction were for a long time regarded as the principal factor in their production. Many things, however, in the inflammatory conditions in no way comported with the ordinary processes found in tumor growths, and the products of most of the tumor growths were utterly unlike those of the inflammatory process. But as inflammation was believed to be principally due to irritation, it was held to be the prime factor in the production of morbid growths. The author dwelt at length upon the various forms of tumors. One constantly occurring element in all benign tumors was the connective tissue. Sometimes it predominated and sometimes it was held in abeyance. Its presence was never wanting. Of all the tissues in the body, it most readily responded in physiologic activity to irritating processes. In inflammatory changes it was found to be the reconstructing agent. It was not wonderful, therefore, that we had in this tissue the essential part, if not the entire mass, composed of this tissue. Was the connective-tissue germ cell altered in quality? Had it been inoculated by a plastic material altered in quality by an irritant, or had there been a coalescence of protoplasmic germs from other tissues? We had not yet determined this, but he took it that along these lines, if not exactly, yet relatively near to it, would be found the true etiology of the benign tumor.

### Surgical Procedures in Removal of Fibromyoma of Uterus.

DR. JOSEPH EASTMAN, Indianapolis, opened the Symposium on Fibromyoma by reading a paper on the above subject. He said the morphology of the tumor and the environment of the patient should be considered before selecting the method to remove the tumor. Clay, of Manchester, operated for the first time, in 1844, for the removal of fibromyoma of the uterus. After speaking of the early history of removal of myoma of the uterus, Dr. Eastman described the first case that he operated on, Feb. 3, 1887; also the method pursued by him at that time, which can be found in the literature on this subject.

### Myomectomy: Its Place in the Treatment of Fibromyoma of the Uterus.

DR. O. BEVERLY CAMPBELL, Chicago, said the operation of myomectomy was not applicable to all cases of fibromyomata of the uterus, but could apply only to well selected cases. This operation did not supplant panhysterectomy, hysteromyomectomy, and the different procedures for relief of fibromyomata, but took its place as one of the recognized rational procedures, and as it was a conservative measure, it should be the favorite procedure when possible. A critical bimanual examination through the vagina and rectum under complete anesthesia would usually admit of the diagnosis of cases amenable to this operation. All of the different varieties of fibromyomata, namely, the subperitoneal, the interstitial and the submucous, may be treated by this method. By many operators it had been limited to the pedunculated subperitoneal variety. However, it had now been successfully applied to every variety of fibromyomata, with satisfactory results as to the immediate mortality rate and permanency of cure. The author concludes that myomectomy should be the preferred method in every case where possible to do so without extra risk to the patient, and where the ovaries can be conserved with the uterus. Operative interference should be advised in every case of fibromyomata where after a careful examination myomectomy was considered possible. The operation of myomectomy was, at all times, as safe in cases where it was applicable, as hysteromyomectomy and panhysterectomy, and very many times almost a minor procedure practically free of risk. That the early diagnosis of fibromyomata should be insisted upon with a view of enlarging the percentage of cases in which myomectomy may be applicable.

### Management of Uterine Fibromyomata Complicated by Pregnancy.

DR. MILES F. PORTER, Fort Wayne, Ind., after referring to the literature on this subject and reporting an interesting case, gave the following conclusions: 1. Pregnancy was a frequent and serious complication of uterine fibromyomata. 2. If, because of their size or location, they were likely to interfere with gestation or jeopardize the patient's life, they should be removed. 3. Each case was a law unto itself, and should be treated accordingly. 4. The tumor and not the pregnancy was the disease, and therefore any procedure which resulted in leaving the tumor and removing the pregnancy was unjustifiable. This, of course, was not meant to apply to those cases in which the fibroids did not interfere in any way, either with gestation or labor. 5. Pregnancy did not materially add to the risk of operations for uterine fibroids, so far as the mother was concerned. 6. The life of the mother, the life of the child, and the question of future offspring were the most important matters to be considered in reaching a conclusion as to the treatment of a case of uterine fibroids complicated with pregnancy.

### Treatment of Fibroids of the Uterus by Electricity, and Present Status.

DR. FRANKLIN H. MARTIN, Chicago, said that in the light of our knowledge there was a time when the galvanic treatment of fibroids of the uterus by experts was legitimately the most conservative treatment possessed for a majority of those troublesome neoplasms. Now, the removal of fibroids with the knife by experts was the most conservative treatment for the majority of these difficulties. There was a time when the author submitted practically all his fibroid cases to the Apostoli treatment, because this treatment scarcely ever failed to materially benefit the patients; it symptomatically cured a large percentage, and occasionally the tumor seemed to disappear. It accomplished these results without subjecting the patient to a procedure which possessed any legitimate mortality. Gradually the evolution of the surgery for fibroids had reversed the relative position of the galvanic treatment. He

considered vaginal and abdominal hysterectomies and myomectomies for fibroids, giving rise to serious symptoms, with their legitimate mortality reduced to one and two per cent., as remedies more conservative in their results than the treatment of the same tumors with electricity. He believed this, because hysterectomies and myomectomies, with a small percentage of risk, were the only remedies which absolutely relieved the difficulties in all cases. Electricity relieved frequently, symptomatically cured, but seldom actually removed the tumor, and the treatment was tedious to the patient, and occupied much time of the physician in administering it. The present status of the electrical treatment of fibroids of the uterus was, in his opinion, that it had been properly superseded by surgery as a conservative remedy. He now recommended the former in the following cases only: 1. As a local and general tonic, and as a relief of pressure and reflex pains and of hemorrhage in cases with complications contra-indicating surgery. 2. In all interstitial fibroids where operative assistance was absolutely refused by the patient. 3. In tumors of small size of the interstitial variety in which hemorrhages were the principal symptom in women within one or two years of the menopause.

DR. W. O. HENRY, Omaha, Neb., in the discussion which followed the Symposium, thought that the electrical treatment of these tumors was overdone, and that to-day it was largely abandoned. As to myomectomy where there was no complications requiring the removal of the tubes and ovaries, where the growth did not involve the entire depth or thickness of the uterus, so that this organ might be left intact, it was the operation to be performed. He agreed with Dr. Porter as to the removal of fibroid tumors that complicated pregnancy. As to panhysterectomy for uterine fibroids, he objected to it, as a rule. He thought it was better to save as much of the cervix as possible, thus securing a better vault for the vagina and a better support for the uterus.

DR. VAN BUREN KNOTT, of Sioux City, Iowa, said that myomectomy as a conservative procedure in the treatment of neoplasms of the uterus needed no support. It was commonly accepted to-day as the method of election in cases in which it was applicable. He recalled a case of myomectomy performed on a woman three months advanced in pregnancy, who was subsequently delivered at full term of a healthy male child.

DR. B. B. DAVIS, Omaha, said, as to myoma complicating pregnancy, that the tumor should be removed, if possible, before the woman became pregnant, but frequently patients consulted physicians with that complication. He endorsed practically all Dr. Porter had said in regard to the subject. He condemned the induction of abortion before delivering or removing the tumor, and mentioned a case in which he was called in consultation, one of the physicians recommending that that would be the best method.

DR. C. H. MAYO, Rochester, Minn., mentioned the case of a woman, 30 years of age, on whom he operated last June for a tumor complicating her first pregnancy. The tumor proved to be a degenerating fibroid, with free fluid in the abdomen. The adhesions and tumor were much larger than the pregnant uterus. The tumor was removed; the woman made an uninterrupted recovery, and he expected later to be compelled to do a Porro operation, but in due time the woman was delivered of a healthy living child and recovered.

DR. A. C. BERNAYS, St. Louis, Mo., expressed himself in favor of myomectomy where it could be done. He recalled two cases of very large fibroids in which he found that myomectomy was an excellent method of enabling him easily to make a hysterectomy. He believed that in both of those cases he could not have made a hysterectomy without making a myomectomy of the very large tumor first.

DR. CHARLES H. WALLACE, St. Joseph, Mo., was interested in the paper of Dr. Campbell, and said that myomectomies were of recent origin. Myomectomy was comparatively easy of performance in properly selected cases. As to tumors complicating pregnancy, he would follow the advice of Dr. Porter.

DR. J. N. WARREN, Sioux City, Iowa, combated the idea that myomectomy was an easy operation to do, and without any particular danger attending it. He regarded it as a formidable operation, and always attended with considerable hemorrhage, excepting in the subserous variety, where there was a pedicle and the surgeon could incise the serosa around it and simply peel the tumor out; but in the majority of cases where he had a combination of the interstitial and subserous varieties, it might be necessary to go through the entire thickness of the uterine wall; then it was not a simple operation It was one that required not only great dexterity, but good judgment in determining exactly the limits of the myomatous mass which was to be removed.

DR. W. A. TICHENOR, Chicago, seconded the remarks of the last speaker as to the formidability of myomectomy. If there were one or two small tumors close to the peritoneal surface, it was not difficult to shell them out. On the other hand, if there were eight or nine tumors of fair size, and the surgeon undertook to remove them all from the surface of the uterus, he would get the uterus pretty well riddled with incisions for their removal, and it was not a safer operation, in his judgment, than a hysterectomy.

DR. JAMES E. MOORE, Minneapolis, endorsed the paper of Dr. Campbell. All would agree that what was conservatism a few years ago was no longer conservatism. There was one point he wished Dr. Campbell had emphasized, namely, the possibility of doing myomectomy through the vagina. Within three weeks he operated through Douglas' pouch for the removal of a tubal pregnancy before rupture, and incidentally removed two fibroids, one of which was situated in the anterior wall of the uterus, well down toward the bladder, yet it was not difficult to remove it.

DR. DONALD MACRAE, JR., Council Bluffs, Iowa, commended the paper of Dr. Campbell, and said it was the sinew of conservatism. These fibroid tumors should be operated upon and removed as soon as they are diagnosticated.

DR. LEWIS SCHOOLER, Des Moines, Iowa, said the trend of the discussion seemed to be in the direction of operating on uterine fibroids by some method or other. He thought there was hardly a practitioner in the room who did not know of some of these fibroids having existed for ten or fifteen years in women without producing any disturbance. He did not think it was well to operate for their removal as soon as they were discovered. There were some women who had passed the menopause, others who were near it, and still others who would probably not give birth to children, in whom these fibroids caused absolutely no trouble. Some of these cases could be let alone.

The discussion was then closed by the various essayists.

*(To be continued.)*

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## FIFTH DISTRICT BRANCH OF THE NEW YORK STATE MEDICAL ASSOCIATION.

*Special Meeting, held at Newburg, Nov. 20, 1901.*

President, Dr. Emil Mayer, in the Chair.

### Appendicitis.

DR. JOHN B. DEAVER, Philadelphia, read a paper on this subject. He said that he had operated for this disease several hundred times a year, yet he felt that the only truly conservative course in the treatment of this affection was the resort to the aseptic scalpel of the surgeon as soon as the diagnosis of appendicitis had been made. The first step to a correct understanding of this affection was a study of the antemortem and not the postmortem pathology. If the profession generally had an opportunity to see a large number of cases of appendicitis on the operating table the lesson there learned would not be lost. The three cardinal symptoms are pain, tenderness and rigidity. There is usually a sudden onset of pain in a healthy individual. The typical tenderness of appendicitis was not that carelessly elicited, but that obtained by the pressure of a single finger, and it was confined to a very small area. Rigidity of the neighboring part of the rectum was usually present from the onset, though it could not be detected frequently at first because of the delicacy of palpation required. A light touch was essential and the palpation

should be begun at some distance from the affected region. The diseases most apt to be confounded with appendicitis are typhoid fever, extra-uterine pregnancy, cholecystitis and acute mechanical intestinal obstruction. Strangely enough typhoid fever was the most difficult to differentiate from a mild case of catarrhal appendicitis. Gurgling was not usually present in appendicitis and the presence of a leucocytosis would usually exclude typhoid fever. The history, the location of the point of greatest tenderness and the character and distribution of that tenderness together with a rectal examination, would usually enable the physician to differentiate between appendicitis and cholecystitis. Appendicitis is not infrequently accompanied by more or less jaundice. The practice of keeping a patient under observation to see if the case would become operative was to be severely condemned. He did not hesitate to say that it was unjustifiable to delay after the diagnosis of appendicitis had been made. Time and again had he seen valuable lives sacrificed on this altar of procrastination. The ideal time to operate in appendicitis was in the stage of appendiceal colic. The procrastination which allows a walled-off abscess to form was to be deprecated. In the healing of an appendiceal abscess the contraction attendant upon the process of healing often results in acute mechanical obstruction. So much did he fear this complication that he was accustomed to operate as soon as there were present paroxysmal abdominal pain, nausea, vomiting, slight tympany and an inability to pass flatus or to have a movement of the bowel as a result of the use of purgatives or high enemata. It was most important to evacuate all abscesses, using no chemical antiseptics for irrigation.

DR. PARKER SYMS, New York City, said that some years ago a man was thought to be too radical who advised operation in all cases of appendicitis, but the prevalent opinion of the present day was in favor of such a course. In a case of fulminating appendicitis before perforation had taken place there were no symptoms except such as would be found in cases of very mild catarrhal appendicitis. An operation done before the occurrence of perforation was one of the simplest in surgery.

DR. L. W. HOTCHKISS, New York City, said that the position of a surgical practitioner who has no well-formulated views on the treatment of appendicitis is a most unfortunate one, and it is not surprising that such a person shrinks from seeing these cases in consultation. In the opinion of the speaker, there was no more danger from operating during an attack of appendicitis than in the interval, and he thought the position taken recently by many in favor of the interval operation had done a good deal of harm. He was personally in favor of an early and radical operation, and the employment of a simple technique, doing away as far as possible with the use of gauze.

DR. IRVING S. HAYNES, New York City, said that it was not always possible to find the appendix when it is only moderately tender. The appendix often occupies a position across the psoas muscle, and hence if the patient were instructed to raise the knee, thus making this muscle tense and bringing it up nearer the surface, it would be found easier to elicit this tenderness.

DR. E. D. FERGUSON, Troy, said that he was one of those who regard appendicitis as a surgical disease, yet he could not altogether agree with the statements made in the paper. It should not be forgotten that the operation done in the height of the attack furnishes a mortality of from 15 to 17 per cent., according to statistics recently published by Dr. Deaver himself. What was the natural mortality of all cases of appendicitis when not operated on? He had long pondered upon this question, and had in the past few years evolved a rule for his own guidance. He was willing to admit that the interval operation had been overworked, yet according to Dr. Deaver's statistics the mortality of the interval operation is less than one per cent. He knew of no more reliable and extensive statistics than those from which he had just quoted, and hence these figures brought us face to face with an important practical question. According to his own experience, purulent accumulations occur in 10 per cent. of cases of appendicitis, and the explosive forms in less than 2 per cent. If one operated within 24 hours it was probable that there would not be much septic material outside of the appendix, and one could do an aseptic operation with excellent chances of success. We should be just as thorough as Dr. Deaver in removing pus pockets, but it was an entirely different matter to remove an appendix. It was often most difficult to find the appendix even on the postmortem table, and hence to go on and separate adhesions in the living subject seemed to him highly improper. The appendix should be removed if it could be done without danger of exposing the uncontaminated portion of the peritoneal cavity.

DR. DEAVER replied that the mortality of 15 per cent., quoted by the last speaker, had been correctly given, but this rate had been produced very largely by operating on many cases coming first to him with large abscesses. One could not rightly compare cases in which the diagnosis had been made positive at operation with those in which it was only conjecture, there having been no confirmation of the diagnosis by actual inspection. He was most careful not to disseminate sepsis, and for that reason he opened into the healthy peritoneum beyond the abscess, and by the proper disposition of gauze was able in most cases to secure good results. The whole matter resolved itself into a question of technique.

### Etiology and Treatment of Bright's Disease.

DR. CHARLES E. QUIMBY, New York City, read this paper. He divided the cases of Bright's disease into two great classes, those of pure inflammation and those of cellular degeneration. The chief etiologic factors were: 1, defective vascular supply; 2, toxic depression of cellular metabolism, and 3, functional strain. He thought there was more renal disease due to obstipation and impaction of feces than to any other one cause. The first sign or symptom of Bright's disease would be found in the vascular system. Successful treatment was possible only in the early stages. The perverted function of the nutrient organs must be restored, the toxins neutralized and the kidneys let alone. One should refrain from increasing the toxic strain by giving digitalis. When pneumatic differentiation could be had other methods of stimulating the heart would not be required. The main purpose of the paper was to show that chronic Bright's disease is the result of very common conditions, and that success in its treatment depends upon skill in detecting the signs of approaching trouble and functional failure and averting the same.

DR. JOHN WINTERS BRANNAN, New York City, said that the chief points in the treatment of Bright's disease were the restriction of proteid food, the prohibition of strong alcoholic liquors, the encouragement of a free use of the alkaline waters and the promotion of the action of the skin and bowel. The patient should be warmly clad and chilling of the body surface should be avoided. Occasionally drugs were of service. Nitroglycerin was sometimes of great value. Laxatives must be given to secure a free action of the bowels. In the main, the treatment of Bright's disease was hygienic and dietetic rather than medicinal. Scarlet fever was the most important cause of renal disease. Two cases were narrated, one the result of scarlet fever, and the other dependent upon chilling of the surface of the body.

DR. F. P. HAMMOND, New York City, spoke of the difference in red and white meats in their relation to the production of toxemia. It had been stated that persons may take white meat because of the shortness of the fiber without such disturbance of digestion that would result from the ingestion of red meat, a point worth remembering in connection with the management of cases of Bright's disease, where so much depends upon the avoidance of toxemia.

DR. QUIMBY, in closing, referred to the question of dietetics. His rule was to exclude meats of every kind, and he was sure that the results were far more satisfactory than where halfway measures were used. He would also exclude eggs. Sometimes a diet of hot water and meat would succeed when an exclusively vegetable diet would not answer well. A mixed diet seemed to be particularly harmful.

DR. E. ELIOT HARRIS, New York City, introduced the following resolution, which was adopted:

*Resolved*, That the Committee on Public Health of this District be requested to investigate the matter of the water supply and the ice supply of the cities and towns of this district, and report back a plan for the better protection of the public health from the contamination of drinking water.

DR. FREDERIC W. LOUGHRAN, New York City, chairman of the Committee on Public Health of the Fifth District, called attention to the unusual prevalence of smallpox at this time throughout the state, and the need for legislation to secure systematic vaccination. He said that statistics show that smallpox has gained a foothold only in those countries having no compulsory vaccination law. The members were urged to make personal effort to secure the needful legislation.

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## CINCINNATI ACADEMY OF MEDICINE.

*Regular Meeting, held Nov. 25, 1901.*

The President, Dr. N. P. Dandridge, in the Chair.

### Mycosis of the Fauces.

DR. J. A. THOMPSON reported the case of Miss B., aged 18 years, working in a tobacco factory. In December, 1900, her throat felt uncomfortable and she examined it herself with the aid of a hand mirror. Seeing a number of white spots on the tonsil she became alarmed and consulted a physician. She was under the care of this practitioner for several months. During this there were attacks of inflammation, when the throat would be moderately painful. There were other intervals when there would be no subjective symptoms. At no time was there any fever or any other constitutional symptoms that might be traced to the local disease in the throat. The white spots were always present on examination. Examination showed a grayish-white mass protruding from every crypt on the left tonsil. Some of these grayish-white papillæ were black at the summit. There was no congestion of the membrane. The lower portion of the right tonsil was unaffected. At the upper portion between the pillars of the fauces, where they were protected from mechanical irritation, were three large outgrowths. The patient had never complained of any discomfort about the tongue, but examination with the laryngoscope showed three affected nodules in the lingual tonsil. The above symptoms are sufficient to make a diagnosis of that rare condition—mycosis of the fauces. This disease is due to a growth of some kind of mold. Molds are frequently present in the mouth, but only in rare instances do they find conditions favorable for their growth. The changes which make it possible for them to develop in the fauces are not known. In the few reported cases an attack of acute inflammation like follicular tonsillitis or diphtheria seems to have preceded the growth of the leptothrix. The growth may be either superficial or deep-seated. It may grow either on the epithelium or penetrate and destroy it. It generally grows in the crypts of the tonsils and protrudes from their mouths. From the tonsil the growth usually extends to the lymphatic tissue at the base of the tongue, the lingual tonsil, and may involve other parts of the faucial mucosa. There is little or no inflammation of the affected mucous membrane. The subjective symptoms are stiffness and soreness of the affected parts. The masses in the crypts of the tonsils can be differentiated from the cheesy contents frequently found there by the difference in color and by the fact that the cheesy mass can be easily pressed out while the mold can not be separated without rupture of blood vessels and some hemorrhage. The only disease which it resembles in appearance is acute follicular tonsillitis. The inflammatory and constitutional symptoms of the latter disease together with the history should make the differentiation easy. Mycosis of the fauces is not dangerous to life, but there is no tendency to spontaneous recovery. Without treatment the disease usually persists as long as the patient lives. Local applications of medicines to the affected areas seem to have no influence on the growth of the mold. The only successful treatment has been the destruction of the membrane from which it grew, either by the galvano-cautery or by direct excision. In the present case the treatment adopted was excision of the infected areas in the tonsil with the Myles tonsil punch. Examination of the removed portions showed that the growth had extended deeply into the tissues of the tonsil. The galvano-cautery was used on the infected areas in the tongue. While the process of cure was tedious, the final recovery was complete.

### Apoplexy in the Visual Center Without Any Other Symptom of Motor or Sensory Paralysis.

DR LOUIS STRICKER reported the case of a laborer, 60 years of age. He related that during the previous two weeks he had been employed in the preparation of mushroom beds in a closed cellar. In doing this he had hauled and spread over the floors some twelve loads of manure, and at night, on coming out of this cellar, he always felt more or less dizzy, his eyes were suffused with tears, but that gradually this latter condition gave way to excessive dryness. On the afternoon of September 27, he states, on coming up out of the cellar he seemed even more dizzy than usual, and his gait was so unsteady that a policeman meeting him inquired if he were drunk. The officer assisted him home where he immediately collapsed into a chair, and during the course of the evening gradually sank into what appeared a deep sleep. The people with whom he was making his home tried to get him upstairs, but only succeeded in getting him as far as the back staircase where he finally woke at about 4 a. m. He groped his way as best he could to his room and after a day's intermission, resumed his work; but from this day forward he found that his vision was very much blurred and that he could not read. He gives a family history of being a widower, 60 years of age, having raised a family of seven children; that he drinks moderately, does not smoke, denies all venereal disease, and states that he has never had any serious illness. Examination of his heart shows this to be normal, but evidences of atheroma are evident and his pulse is not compressible. This case presents two important and essentially different conditions. First, that relating to the conjunctivæ, and second, that connected with his sight. On inspection, lower lids were relaxed, and the conjunctivæ dry and glistening. He stated that this condition had only made itself evident since he had been occupied in the cellar spreading this manure. This fact is interesting in that it shows a form of conjunctivitis particularly apt to occur in stablemen. The gases which arise from the manure are ammoniacal in nature, owing to the urea present in the horse urine. This ammonia gas leads to conjunctivitis, excoriations and blepharitis, so frequently observed in stablemen. The ammonia gas inhaled in a closed cellar may have been sufficient to have stimulated the heart's action to a degree capable of producing a cerebral hemorrhage, in a case such as the present, where there are atheromatous changes in the vessels, and thus lead to a small localized hemorrhage. The second condition was a localized hemorrhage. The man stated that everything viewed appeared to be partially enveloped in a cloud, that at a distance he could read fairly well, but that it was impossible for him to read a paper, since the upper half of all the letters were practically gone. If he looked at an object in the ordinary way, he could not see it, but if he turned his head toward his left and then looked at objects, they appeared perfectly clear. In looking at an object he stated that three-fourths of it was clear, whereas the upper right quadrant was wanting. The same condition was disclosed where each eye was examined separately for this symptom. Hence attention was immediately attracted toward some form of hemianopsia. His fields were taken, as per charts, disclosing a sector-like defect in the right left eye from 15 degrees to the nasal side to 105 degrees to the temporal; in the right eye, from 15 degrees to the temporal side to 105 degrees to the nasal. Both fields were slightly contracted, and in the area of the defect there was still an area of about five degrees extending around the point of fixation. His color sense was perfect in the retained portions of his fields. Since then his fields have been regularly taken each week, and though the general size of the defective area has remained practically the same, still there has been this im-

portant improvement, in that the area around the center of fixation has gradually been increased in the left eye up to ten degrees, whereas, on the right, it is still about five degrees, the point of practical importance being that with the return of central vision he is again enabled to read and is no longer so conscious of this defect in his visual field. The defect being projected forward and to the left, would naturally suggest the lesion in the brain to be located in the right hemisphere. A careful examination disclosed that the consensual reaction of his pupils is perfect; that he has no paralysis of the sphincters of the pupil, or of accommodation, nor has he any paralysis of other ocular muscles. He showed no form of other sensory or motor paralysis nor did he disclose any other form of psychic involvement. The interesting question naturally was to try if possible to form some idea as to the location of the lesion. From its gradual onset it appeared to be a thrombus, or a small localized hemorrhage.

DR. R. B. TATE reported a "Case of Smallpox Simulating a Threatened Abortion."

DR. M. L. HEIDINGSFELD presented a patient with lupus erythematosus of the face in a girl of 10, treated with resorcin held in a solution of gelanthum, which remedy is capable of holding resorcin in 50 per cent. solution. The girl had only been under this treatment for a few weeks but in that time had shown a remarkable improvement.

### Papilloma of the Bladder.

DR. JOSEPH RANSOHOFF presented a specimen of papilloma of the bladder removed two weeks ago from a man aged 40; for a year he had had frequently recurring hemorrhages from the bladder until he had become almost exsanguinated. He complained of great pain on urination; on account of blood clots in the bladder the cystoscope could not be used, but with sound in the bladder and finger in the rectum the tumor could readily be felt. Spinal anesthesia was used and a suprapubic cystotomy made; the tumor was found attached to the mouth of the left ureter from which it was removed by means of the thermo-cautery. The wound was not entirely closed as he feared vesical sepsis.

DR. H. H. HOPPE presented a case of recurrent epileptic seizures. A tumor was found at the superior portion of the left temporo-sphenoidal lobe, and should have produced sensory aphasia but did not. The tumor was the size of a hen egg and pressed against cortex. There had been no headache.

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## SAN FRANCISCO COUNTY MEDICAL SOCIETY.

*Regular Monthly Meeting, held Dec. 10, 1901.*

Dr. John C. Spencer in the Chair.

### Gastrectomy.

DR. E. G. FRISBIE presented a case: A. G. B., male, aged 42 years; occupation, glass-blower. Previous history was good. Present trouble began in June, 1901, when he began to suffer pain after eating and "bloated feeling." Weight was 112. He presented himself October 14, weighing 105. Examination of abdomen revealed nodule about two inches long in left hypochondrium, rolled under finger and retreated under rib. October 15, examination of stomach contents after test meal gave the following result: No free hydrochloric acid present, lactic and butyric acids present. Diagnosis was malignant tumor of the stomach. October 24, operation was made by Dr. E. E. Kelly and Dr. C. A. Dozier assisting; incision was to left of median line over the tumor, which was found to occupy the lesser curvature of the stomach, extending from near the pylorus half way to the esophageal opening. Tumor was excised with a margin of one and a half inches of sound tissue at either side, more than half of the viscus on the lesser curvature and about half of the greater curvature being removed. Opening closed with three rows of sutures and the duodenum attached by a Murphy button to the lower angle of the stomach. Patient suffered almost no pain after the first six hours, vomited a little bloody fluid for two days, after which remained perfectly comfortable. Nutritive enemata were given till sixth day after operation, then liquid food by stomach alone; some feeding by stomach began the fourth day. Murphy button passed on the fourteenth day, some soft food having been allowed three days before. Patient sat up on fifteenth day and went home on the twenty-first. One month after operation patient was able to eat salmon, bread, potatoes, rice, apple-sauce and milk to the amount of 27 ounces at one meal, digested perfectly and with no discomfort. Patient has gained 12 pounds in weight in six weeks since operation and is now engaged in his occupation of glass-blower, wearing an abdominal belt of pure rubber which seems to give better support than the ordinary webbing. Examination of the tumor revealed an adeno-carcinoma with much colloid degeneration.

### The Uniform Principle in Performing Operations for Lacerated Perineum, Cystocele, Rectocele and Prolapse.

DR. HENRY J. KREUTZMANN read this paper. The object of plastic operative interference is to restore the parts to their normal condition, by bringing those layers of tissue into apposition again that were in apposition before their separation. In the so-called "classical" operations we find that they consist in the denudation of the vaginal tissue over the injured part and union of the wound surface through suture. In his opinion every one of these operations thus performed was lacking in the certainty of bringing the proper tissues into apposition in every case. The rational operation that will bring success consists in separation by careful dissection and direct, exact union of those layers of tissue which belong to each other. The practical application of this principle in the operations under discussion could be divided into four different acts: 1. Dividing the vagina, cutting down into the septum between vagina and bladder or between vagina and rectum. 2. The detachment of the prolapsed diverticle of the bladder from the vagina, if necessary from the uterus, or separation of the rectum from the vagina. 3. The careful apposition of the fascial tissue and of the muscles that belong to each other, by direct, exact, buried suture. 4. To finish the operation, the vaginal flaps may be resected and united or they may be united without any resection, as the individual operator sees fit in every single case. The way in which division of vagina and septum was made was immaterial. He made a short incision in the case of cystocele over its lower part, longitudinal or T-shaped, and divided from there bluntly to the sides and upward, separating the vagina from the bladder; then the median incision was carried forward as far as the case demanded, forming thus two flaps. In operations upon the posterior vaginal wall he made a crescentic incision from caruncle to caruncle on the margin between the vaginal mucous membrane and the outside skin, and separated bluntly the vagina from the rectum. The division in every case was carried as far as it was necessary for the exposure of the septum-fascia and muscles. To unite the septum-fascia it was necessary to carefully preserve it on the anterior as well as on the posterior vaginal wall. Union was made by directly suturing this torn and stretched fascia and the muscles. It depended on how much was taken up in the grasp of the needle whether one or two tiers of sutures were made, but that which was important was that the separated tissues were brought into exact apposition under control of the eye and finger. The union was made in front of the bladder or in front of the rectum, these organs being pushed back so that the needle would not enter into their structure. No matter what the operation was, whether for a slight laceration, for cystocele or for complete prolapse, the principal of procedure was always exactly the same. The different operations differed only in the extent to which the separation of the layers was carried and in the extent to which auxiliary operations were called into requisition. In cases of prolapse the only proper permanent radical procedure was operation. When the patient had entered the hospital for the purpose of a plastic operation, why not at the same time, without additional risk, perform some operation that would insure permanently the uterus in good position? He either performed the Alexander operation or made a vaginal fixation. Real vaginal fixation should be done only in women who were beyond the possibility of conception. In cases of complete pro-

lapse he sutured the uterus into the vagina after the bladder had been pushed up sufficiently, sewing the vaginal flaps directly on the uterus, using the uterus as a pelotte, thus preventing the descent of the bladder. The uterus in such cases must be fixed in the paracopal tissue; to insure its staying there it is fastened to the fascial tissue running down from the pubis. In women who might become pregnant the fixation of the vaginal flaps upon the lower part of the uterus, without opening the vesico-uterine pouch was in order.

**Some Forms of Conjunctivitis Considered Etiologically.**

DR. C. S. G. NAGEL read this paper. So-called "simple conjunctivitis" as an affection *sui generis*, has been known for many years before the days of bacteriology as an infectious disease, but its bacteriologic origin was established by the discovery of the Koch-Weeks' bacillus. Clinically, there was a severe catarrh with purulent secretion, which was sometimes difficult to diagnose from the ordinary non-contagious form. This form of conjunctivitis had been studied by accurate observers in widely separated localities. Another etiologically well-defined form of simple conjunctivitis was that caused by the diplo-bacillus of Morax-Axenfeld. This was a markedly infectious form, sub-acute or chronic, probably very frequent and widespread, under the form of a not very severe blepharo-conjunctivitis, affecting the angles, hence its old name of ophthalmia angularis. A third type of primary simple conjunctivitis etiologically well-defined was that caused by the diplococcus lanceolatus. This type presented itself as an eminently acute catarrh with abundant water secretion, containing here and there some formed particles and tending to heal spontaneously after a few days. Children were far more liable to the disease than adults, though with the latter the affection might be protracted or even become chronic. As severe corneal complications were very rare the prognostic importance of an early differential diagnosis as against blennorrhea was obvious. The pneumococcus being to a large degree a normal occupant of the mouth and upper air passages of man, the thought was suggested whether under certain conditions it might not become virulent and the simultaneous appearance of conjunctivitis with catarrhal condition of the air passages gave support to this view. The so-called blennorrheic conjunctivitis was by no means caused solely by the gonococcus. Perfectly typical cases had been seen in which no gonococci could be found, but by far the larger percentage of the severer form of blennorrhea was due to the gonococcus. Again, another form was the pseudo-membranous conjunctivitis. Clinically, the difference between mild and severe cases was very marked. Etiologically, the latter were due almost exclusively to Loeffler's bacillus, which was also sometimes found in the milder cases, doing away with the etiological difference between croupous and diphtheritic conjunctivitis. Since the acute catarrhal forms of conjunctivitis resembled each other so much in the beginning, a bacteriologic examination was absolutely necessary in order to arrive at an exact diagnosis.

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## NEW YORK COUNTY MEDICAL ASSOCIATION.

*Stated Meeting, held Dec. 16, 1901.*

The President, Dr. Parker Syms, in the Chair.

**Decidua Maligna.**

DR. FREDERICK HOLME WIGGIN presented this specimen. The patient, after missing three menstrual periods, had a severe hemorrhage, and had passed pieces resembling those discharged in cases of uterine mole. The uterus was found to be as large as an orange. She was curetted, but this gave rise to such an alarming hemorrhage that her life was endangered, and it was accordingly decided to perform hysterectomy to save her life. After the removal of the organ the diagnosis of decidua maligna had been made. No metastases in the lungs could be detected.

DR. F. M. JEFFRIES exhibited under the microscope slides taken from this specimen, and stated that while he was unable in this instance to make a positive diagnosis he felt reasonably sure that the specimen represented an early stage of decidua maligna, and in this view he was supported by Dr. O. H. Schultze.

**Present Status of the Use of Tuberculin and of Products Obtained Directly or Indirectly from Tubercle Bacillus in Pulmonary Tuberculosis.**

DR. E. A. DE SCHWEINITZ, chief of the Biochemic Laboratory at Washington, D. C., said that the standard tuberculin was sterilized glycerin solution of a culture of the tubercle bacilli containing the germs and their products. Experiments had been carried out on animals which were closely akin to man, i. e., on monkeys and baboons. A ring-tailed monkey and a baboon had been inoculated with a culture of human tubercle bacilli, and had been kept in separate cages. The monkey died in six weeks and the baboon in eight weeks, and all of the organs were found to be the seat of tubercular infiltrations. The opinion seemed to prevail at the present time that tuberculin should be used very carefully for diagnostic purposes.

**Early Diagnosis of Pulmonary Tuberculosis with Exhibition of X-Ray Pictures of Diseased Lungs.**

DR. J. EDWARD STUBBERT, Liberty, N. Y., was the author of this paper. He said that by early diagnosis he meant one made during what might be called the pre-bacillary stage. Out of a number of cases of incipient pulmonary tuberculosis at Liberty, 15 per cent. had been apparently cured and 63 per cent. sufficiently improved to return to their homes and become useful citizens. A slight hacking cough, with or without expectoration, slight rise of temperature, and disturbance of digestion were important early symptoms. Small pulmonary hemorrhages sometimes gave rise to no appreciable physical signs until some weeks afterward. Flattening of the clavicles, diminished expansion on the affected side, seen best posteriorly, and restriction of the movements of the diaphragm on the affected side were important physical signs in the early stage. In most instances high-pitched and prolonged expiration was present. Râles at this stage were rarely present, and the absence of tubercle bacilli from the sputum did not exclude tuberculosis. According to his experience syphilitics reacted to tuberculin. There was nothing distinctive about the anemia, which was an effect and not the cause of the disease. He had found the *x*-rays of value in the early diagnosis of pulmonary tuberculosis. It was best to apply the fluoroscope to the bare chest, and beginning at the apex move it downward towards the base of the lungs. In about 30 per cent. of normal chests the right apex appeared less clear than the left. If the pleura were affected it would often give rise to a slight haze. If the patient were instructed to take a long breath it would be noted that the normal side became clearer while the diseased side remained unchanged. A practiced eye could detect with the *x*-rays incipient foci. The restricted motion of the diaphragm on the affected side was almost pathognomonic.

**Demonstration on Cadaver of the Surgical Anatomy of the Lung.**

DR. IRVING S. HAYNES exhibited a case of long-standing empyema and directed attention to what he called the costophrenic sinus, i. e., the space between the lower border of the lung and the lower angle of the reflected pleura. This space did not exist in health. Although the text-books on physical diagnosis stated that the pleura rose much higher than the clavicle, as a matter of fact the "pleural cone" did not extend more than one-half to three-quarters of an inch above the first rib. As this part of the lung was not able to expand it followed that it was very poorly aerated.

**Surgical Procedures for Pulmonary Tuberculosis.**

DR. WILLIAM G. LE BOUTILLIER presented this paper. He said that the obstacles to be surmounted in the surgery of the lungs were both operative and diagnostic. Nitrogen gas had been introduced into the pleural cavity for the purpose of holding the diseased lung at rest, and while the method was practically free from danger it was still on trial. When there were cavities nitrogen gas was useless unless there were numerous adhesions. Suppuration in the thorax should be an indication for prompt operation.

### Treatment of Pulmonary Tuberculosis.

DR. CHARLES E. QUIMBY dwelt in this paper upon the great importance of promoting the general nutrition and improving the pulmonary circulation. He was strongly in favor of giving these patients alcohol, believing that the resulting stimulation was of the greatest importance. Aromatic bitters, mercury and arsenic were all useful medicinal agents. Hydrotherapy or vigorous dry rubbing of the skin would be found exceedingly useful, and inhalations, if properly employed, were almost always beneficial. Antiseptics seemed to have the power of diminishing the exudate.

DR. WILLIAM G. SCHAUFFLER, of Lakewood, N. J., spoke of some of the every-day problems confronting the physician who had to deal with tuberculous individuals of slender means.

DR. H. P. LOOMIS was not so enthusiastic as Dr. Stubbert over the diagnostic aid rendered by the *x*-rays, for the shadows revealed by this means were so numerous as to be very perplexing. At one time, the speaker said, he had injected tuberculin into 15 cases of advanced pulmonary tuberculosis, and they had failed to give any reaction. An early physical sign of pulmonary tuberculosis was the presence of localized râles heard under the scapula when the arm was drawn forward. Heredity was not a potent factor here; the all-important one was the personal element.

DR. S. A. KNOPF spoke of the advantages of what he called the sanatorium treatment at home.

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## CHICAGO NEUROLOGICAL SOCIETY.

*Regular Meeting, held Oct. 24, 1901.*

DR. HUGH T. PATRICK in the Chair.

DR. H. GRADLE presented a patient with bitemporal hemianopsia and discussed the probable site and nature of the lesion causing the symptom.

### Myasthenia Gravis.

HUGH T. PATRICK presented a patient who was believed to have myasthenia gravis. He was a negro (not pure) 25 years of age, a cooper, and had been practically well until five years ago when the present trouble began. He first noticed weakness of the arms when at work, which soon involved the legs and was accompanied by a dull ache or feeling of intense fatigue. He early noticed that a short rest would relieve the symptoms, which would then reappear after a few minutes of work. He gradually grew worse and had been able to do no work for three years. The most striking symptom was a generalized myasthenic condition present, to some extent at all times, but enormously increased by a short period of activity. For instance, after a rest he could start off at a brisk rate and with almost a normal gait, but would rapidly weaken, and after walking about a block be compelled to come to a standstill. After a short rest he could again proceed as before. There was no particular involvement of limited groups of muscles as has been the rule in reported cases. The muscles about the shoulders and neck and the pelvo-femoral group seemed to be weaker than others, but the eye muscles, face muscles and muscles of mastication, although not vigorous, were not weaker than those of the extremities. The myasthenic electric reaction was present to a very limited degree and the deep reflexes also showed some slight exhaustion after being rapidly elicited twenty or thirty times. As the blood, urine, feces and all the thoracic and abdominal organs were normal and there were no conclusive evidences of organic involvement of the nervous system, the author was driven to a diagnosis of myasthenia gravis.

DR. C. W. LODOR inquired of the mental condition of the patient, as to whether speech was slow and intellect sluggish. Dr. Sippy asked whether there were not present some symptoms of Addison's disease and whether the tension of the pulse had been noted. Dr. Goodkine called attention to the fact that no mention was made of the condition of the patient's voice.

DR. PATRICK, in reply, stated that while the man's voice was not strong and speech was slow, the intellect seemed normal, there was no bronzing of the skin discoverable and the pulse was soft and normal.

### Lessons of Conus Medullaris and Cauda Equina.

DR. BERTRAM W. SIPPY, in his thesis upon lesions of the conus medullaris and cauda equina, said that the symptoms produced by their disease are well defined; but they may be readily overlooked unless one is familiar with the clinical picture produced. It is desirable both clinically and anatomically to limit the conus medullaris to the third, fourth and fifth sacral and coccygeal segments. Disease of those segments of the cord shows characteristic sensory and motor disturbances. Sensation is impaired in an area symmetrically distributed which involves the integument of the penis, scrotum, perineum, anus, inner aspect of the buttocks, and posterior surface of the thighs. The sensibility of the mucous membrane of the penis and rectum may also be dulled. If the lesion is sufficiently destructive, the muscular power of the bladder and the rectum may be seriously impaired, sexual power lost, and bed-sores may develop.

Lesions of certain fibers of the cauda equina may produce a clinical picture very similar to that of conus disease. It is extremely important to be able to recognize and differentiate the two conditions since caudal disease may often be amenable to surgical treatment. The essayist reported nine cases in which disease of one or the other of these structures was involved. The etiologic factors included focal myelitis, tumor of the conus, spinal column injury, tumor of the vertebræ, and tubercular spondylitis. The symptoms of a conus lesion were observed in one case of tabes. Autopsy was held on the case in which tumor of the conus existed. The areas of anesthesia in those cases in which the adjacent cord was involved showed a striking similarity, and did not correspond accurately to the areas previously mapped out by others who have contributed to the subject of spinal localization. The general resemblance, however, was very close.

A few of the more important points given in differential diagnosis between diseases of the cauda equina and conus medullaris are here appended. Except when due to trauma, disease of the cauda usually develops slowly, producing symptoms more or less characteristic of "root disease." Pain upon movement is first felt in the lower extremities. Later the pain becomes spontaneous and persistent with exacerbations. Subsequently, anesthesia develops. If the lesion is uniform, the cutaneous distribution of its central fibers are the first areas affected. Bladder and rectum symptoms may appear early and are usually present before anesthesia becomes pronounced. Motor weakness is present in proportion to the pressure on the motor fibers and, as a rule, does not appear until pain has become a prominent feature. The paralysis is characterized by loss of muscular tone. At onset, reflexes may be exaggerated; later, they are lost. Atrophies may develop. The electrical reactions may be altered. Decubitus has been noted.

Disease of the conus is characterized by the sensory and motor symptoms previously described. In addition, the symptoms are likely to develop rapidly. Sensation may not be disturbed alike for all qualities. The pain and temperature sense is likely to be more seriously affected than touch sense. Pain is absent. Decubitus is more likely to occur than in caudal disease. Above all, that which characterizes disease of the cauda, is pain. In a given case the absence of pain speaks directly for the conus lesion.

DR. SYDNEY KUH said that in all acute cases of segmental cord lesions low down, the diagnosis was made from symptoms as given at the outset and was very usually wrong, as the symptoms at first indicated a larger lesion than subsequently appeared. In making a differential diagnosis between conus and caudal lesions it is important to remember two symptoms, pain and disturbances of motility. In conus lesions there is less pain and more disturbance of motility, while in lesions of the cauda equina the reverse is true.

DR. BARKER asked Dr. Sippy whether in his various cases the overlapping of the terminal cutaneous nerves could be demonstrated. Dr. Sippy replied that while each area of skin

contained fibers from the separate segments of the cord, the overlapping was in the roots and not in the segments. He also stated that disturbances of pain and temperature were more sharply outlined than touch.

## Therapeutics.

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulae and outlines of treatment will be answered in these columns.]

### PRESCRIPTION WRITING, VII.

*(Continued from Vol. xxxvii, p. 1697.)*

**Frequency of Administration.**

The rapidity with which a drug acts should govern, ordinarily, its frequency of administration. This rapidity of action is dependent to a great extent on the physical condition of the patient when the medicine is given. Medicines, however, as patients, may possess characteristics peculiar to themselves. These characteristics include their promptness in action and the length of time over which their physiologic action extends. In order to illustrate more fully, sulphonal may be referred to as an example. It is a preparation employed as a hypnotic. It varies, however, from the ordinary class of hypnotics in that it is extremely slow in producing sleep; consequently in order to obtain the best results it must be given three or four hours previous to the usual time for sleep. Owing to its tardiness in action, the dose should not be repeated in less than five or six hours. In this respect it differs from the bromid as a hypnotic, a second dose of which may be given in two or three hours if the first has not produced the desired results, the bromids being more prompt in their action than sulphonal.

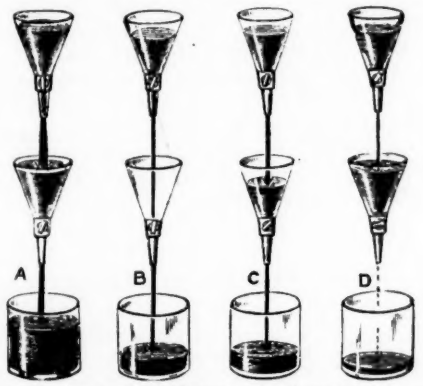


Diagram to illustrate the differences produced in the amount of a drug present in the organism by alterations in the rate of absorption and excretion. The lower funnel represents the organism. A represents the condition when a drug is rapidly introduced, as by injection into a vein. In this case the drug, *e. g.*, curara, comes to be present in large quantities in the organism, and produces its full physiological effect. This is represented by the fulness of the lower funnel. And it does this notwithstanding the rapidity of excretion, which causes the drug to be quickly eliminated and to appear copiously in the urine, as represented by the fulness of the beaker into which the fluid flows from the lower funnel. B represents the condition when a drug is slowly absorbed and rapidly excreted, as when curara is given by the stomach. In this case the quantity present in the blood at any one time is very minute, as represented by the empty condition of the lower funnel. C represents the condition when absorption is rather quicker than excretion, as when a dose of morphin is given by the stomach. D represents the conditions where absorption is moderate, but excretion is interfered with, leading to accumulation in the blood, as where an active drug is given by the mouth, and the kidneys are much degenerated.

Strophanthus may also be mentioned in this connection. This preparation is very prompt in action; yet its effects as a heart stimulant extend over several hours; the frequency of its administration should be regulated accordingly.

Dr. D. R. Brower, who was among the first to employ this preparation in governing the heart's action in cases of exophthalmic goiter, states that that organ may be constantly influenced by the medicine if the strophanthus is repeated only once every eight hours.

The frequency of administration depends also upon the FUGITIVE AND CUMULATIVE ACTION OF DRUGS.

Brunton illustrates simply and concisely how the amount of any drug circulating in the body at a given time depends on the ratio of its absorption to its elimination. He takes two funnels, each provided with a stopcock and places them one above the other. The upper funnel represents the stomach, and its stopcock the vessels through which absorption takes place; the lower funnel represents the body generally, and its stopcock the channels of elimination, the chief channel being the kidneys. If the stopcock of the upper funnel is closed no fluid will be received by the lower funnel, however full the first one may be. If the stopcock of the upper funnel is slightly opened and the lower one closed, the second funnel gradually becomes full, In other words, if elimination is prevented the drug gradually accumulates in the system, even though absorption from the stomach takes place slowly, until a large quantity is taken into the body. He carries the illustration a little further and states that by opening both stopcocks, elimination will be carried on at the same rate as absorption and thus accumulation does not take place. (See illustration.)

There are certain drugs which open both stopcocks rather widely and consequently are quickly taken into the system and as quickly eliminated. Amyl nitrite is a splendid example of this class; it is quickly taken up and within twenty minutes its power is spent. Nitroglycerin acts similarly but somewhat longer, an hour or one and a half hours passing before its influence upon the circulation ceases. All the ammonium salts, the bromid excepted, are likewise quick in their action. Croton oil comes in this class. From their rapidity in action, the foregoing preparations are classed as fugitive drugs.

There are other drugs which open the upper stopcock but have no such tendency to open the lower one. In this class may be mentioned digitalis, strychnia, arsenic, the iodids and belladonna. The cumulative tendency of these preparations is well known. Each drug mentioned in this last class produces certain toxic symptoms peculiar to itself as an indication that the full physiologic limit is reached and that absorption has taken place more rapidly than elimination. Consequently, drugs in this class, being cumulative in action, when prescribed continuously for any length of time, must either be given less frequently or in smaller doses if the toxic symptoms are to be avoided.

*(To be continued.)*

### Treatment of Acute Bronchial Catarrh.

Yeo recommends the following:

| | | | |
|---|---|---|---|
| ℞. | Vini antimonialis | ℥ii | 8 |
| | Spts. etheris nitrosi | ℥iv | 16 |
| | Liquoris ammon. acetatis | ℥ii | 64 |
| | Tinct. camph. compos. | ℥ii | 8 |
| | Aquæ q. s. ad | ℥viii | 256 |

M. fiat mistura. Sig.: Two tablespoonfuls every three or four hours.

The following containing spirits of chloroform is sometimes employed by him to allay the cough:

| | | | |
|---|---|---|---|
| ℞. | Ammon. carb. | gr. xxxii | 2 \| 12 |
| | Tinct. scillæ | m. lxxx | 5 |
| | Spiritus chloroformi | ℥ii | 8 |
| | Infusi senegæ q. s. ad | ℥viii | 256 |

M. Sig.: Two tablespoonfuls every four or five hours.

### Treatment of Atonic Amenorrhea.

The following is recommended by "Encyclopedia of Medicine" in treatment of atonic amenorrhea:

| | | | |
|---|---|---|---|
| ℞. | Tinct. ferri chloridi | ℥iii | 12 |
| | Tinct. cantharidis | ℥i | 4 |
| | Tinct. guaiaci ammon. | ℥iss | 48 |
| | Tinct. aloes | ℥ss | 16 |
| | Syr. simplicis q. s. ad | ℥vi | 192 |

M. Sig: One tablespoonful in water three times a day; or:

| | | | |
|---|---|---|---|
| ℞. | Ext. aloes | ℥i | 4 |
| | Ferri sulph. exsic. | ℥ii | 8 |
| | Asafetidæ | ℥iv | 16 |

M. ft. pil. c. One pill after each meal, increased to three.

In some cases the following may be employed:

| | | | |
|---|---|---|---|
| ℞. | Ferri sulph. | gr. xlviii | 3\|30 |
| | Pulv. aloes | gr. xii | \|75 |
| | Oleoresinæ terebinthinæ | gr. xxvii | 1\|75 |
| | Olei terebinthinæ | m. x | \|66 |

M. ft. pil. No. xxx. Sig.: Two pills after meals three times a day.

### Treatment of Gout.

Colchicum is regarded as one of the best preparations in this condition. It is said to be much more effective when combined with purgatives or when the bowels have been previously purged. The following combination is frequently used:

| | | | |
|---|---|---|---|
| ℞. | Vini colchici | ℥ss | 16\| |
| | Mag. carb. | ʒi | 4\| |
| | Mag. sulph | ℥ss | 16\| |
| | Aq. menth. pip. q. s. ad | ℥vi | 192\| |

M. Sig.: A teaspoonful every four hours while the pain is severe.

## Medicolegal.

**College Infirmary Not Exempt from Taxation.**—The Court of Appeals of Kentucky holds, in the case of the Gray Street Infirmary vs. the City of Louisville, that an infirmary established as an adjunct to a medical college for the purpose of making the latter more attractive to students, and to induce attendance by reason of the instruction and clinical experience received in the infirmary, and in this way to increase the profits of the professors operating the college, can not be exempted from taxation on the ground that it is purely an institution of public charity, notwithstanding that the professors in the medical college do a great deal of charitable work in the infirmary.

**Privileged Communications to Hospital Surgeons.**—Section 834 of the New York Code of Civil Procedure provides that a person duly authorized to practice physic or surgery shall not be allowed to disclose any information which he acquired in attending a patient in a professional capacity, and which was necessary to enable him to act in that capacity. Under this, the first appellate division of the Supreme Court of New York holds, in the personal injury case of Green vs. the Metropolitan Street Railway Company, that the testimony of an ambulance surgeon of a hospital as to what the party suing, who was taken in his ambulance to the hospital after an accident, told him about how the accident occurred, was properly excluded. In determining its admissibility, the burden was, doubtless, the court says, upon this party to show that the evidence was privileged. It may not have been necessary that the surgeon, in order to treat him, should obtain the information as to how the accident occurred; and it may well be said, from a medical standpoint, that it was not necessary for the surgeon to be informed of the details of the accident, but that information was necessary, upon the witness' own statement, to enable him to do some act as a surgeon, namely, to comply with the requirements of the hospital that he should ascertain how the accident occurred, in order that he might enter a history of the case upon the books of the hospital. The information he obtained from the party suing was distinctly for the purpose of making a hospital record. This evidence, which was excluded, was, therefore, the court holds, seeking to elicit information acquired in the line of the witness' duty, and to fulfill an obligation which devolved upon him in the line of his duty; and whatever may have been said by the party, therefore, can not be regarded as a voluntary statement. Under such circumstances, whatever the party may have said concerning the manner in which the accident happened can not be regarded as other than a privileged communication, being made, as it was, to enable the surgeon to discharge his professional duty in connection with a hospital case.

**Power of Board to Employ Physician During Epidemic.**—The Court of Appeals of Kentucky holds, in Walker vs. County of Henderson, that where the entire county board of health resigned their offices because the fiscal court of the county refused to make sufficient appropriation, in their judgment, for the payment of the employes of the board, and the state board of health reappointed all the former members of the county board, and directed them to resume charge of the epidemic of smallpox and pesthouse in the county, upon their reappointment by the state board, the county board had authority to resume charge of the epidemic, and to employ physicians for the treatment of patients confined in the pesthouse. This, the court goes on to say, necessarily involved the power and right to discharge those who had been employed by the fiscal court during the interregnum, and it was the duty of the fiscal court to make fair and reasonable compensation to the persons so employed, whether they approved their employment or not. The power to determine what physicians, nurses, guards, and attendants are necessary is left to the discretion of the board of health; but the power to fix the compensation of the persons so employed, like the compensation of the members of the county boards themselves, is vested in the fiscal court of the county. But neither the county board nor the fiscal court have arbitrary power in the discharge of their respective duties. The county board could not employ persons grossly in excess of the number required. Neither could the fiscal court refuse to make compensation to persons whom the county board, in the exercise of an ordinary discretion, thought necessary, under the emergency, to employ. And the court holds that, as the physician who brought this action was regularly employed by the county board to render the services sued for, namely, to take charge of the pesthouse and treat persons afflicted with smallpox, he was entitled to be paid by the fiscal court the fair and reasonable value of such services, and the fact that the physician appointed by the fiscal court refused to surrender charge of the pesthouse to him by direction of the fiscal court, or to permit him to take charge, was no reason for refusing to pay him, as the county board had undoubtedly the right to appoint, and to continue his employment as long as services were needed in the treatment of the diseased. It was not denied that he abandoned all his business, and stayed during all the period of his appointment at the pesthouse, and was at all times able, ready, and willing to discharge the duties for which he had been employed.

## Current Medical Literature.

Titles marked with an asterisk (*) are noted below.

### New York Medical Journal, December 21.

1 *The Correction of Deformities Following Osteitis of the Knee. Wisner R. Townsend.
2 On the Feasibility and Management of a Hygienic Cure of Pulmonary Tuberculosis Outside of Closed Sanatoria. (To be Concluded.) Charles L. Minor.
3 The Treatment of Abortion. Helen Hughes.
4 Amygdalotomy Rash. Edgar A. Forsyth.
5 *Report of the Committee of Seven of the Medical Society of the County of New York on the Prophylaxis of Venereal Disease in New York City. (To be concluded.) Prince A. Morrow.
6 *The Responsibility for the Recent Deaths Following the Use of Diphtheria Antitoxin and Vaccine Virus. W. R. Inge. Dalton.

### Medical Record (N. Y.), December 21.

7 *The Cure of Chronic Bright's Disease by Operation. George M. Edebohls.
8 *An Improved Method for Introduction of the Stomach Tube. H. Crenshaw.
9 Results of Osteotomies for the Correction of Genu Varum and Genu Valgum. Homer Gibney.
10 *A Method of Protecting the Perineum During Labor. L. E. Norfleet.

### American Medicine (Philadelphia), December 21.

11 Four Cases of Typhoid Cholecystitis: Two Followed by Gallstones. Charles G. Stockton and Albert T. Lytle.

12 A Case of Subcortical Glioma of the Lower Part of the Left Ascending Frontal Convolution Successfully Removed. James Stewart.
13 Surgical Malposition of the Gall-bladder. E. D. Ferguson.
14 *The Question of Ovarian Pregnancy. J. Clarence Webster.
15 *Blindness from Inhalation and Ingestion of Methyl Alcohol. H. V. Würdemann.
16 Angioneurotic Edema; Report of a Case with a Review of the Literature. Bernard Kohn.
17 Alcohol and Insanity. Arthur S. Hamilton.

### Philadelphia Medical Journal, December 21.

18 *The Value of Blood Examination in Diagnosis. Frederick J. Kalteyer.
19 *Hepatic Drainage. John B. Deaver and Edward Kemp Moore.
20 *A Study of the Initial Symptoms in 100 Recent Cases of Smallpox. William M. Welch and Jay F. Schamberg.
21 *Operative Treatment of Bladder-Descent and Sacculation. George Erety Shoemaker.
22 *On the Value of the Rectal Temperature in Pulmonary Tuberculosis. J. C. Braine-Hartnell.
23 Hallucinations: Their Pathogenesis, Clinical Import and Medicolegal Value. J. Leonard Corning.
24 *Treatment of Certain Purulent Conditions of the Antrum of Highmore Through the Natural Openings. Norval H. Pierce.
25 A Case of Morphin Poisoning; Successful Employment of Cocain as an Antidote. Albert C. Barnes.

### Cincinnati Lancet-Clinic, December 21.

26 Diseases of the Eye Due to Abnormal Conditions of the Circulatory System. Louis Stricker.
27 *The Present Status of Serum Therapy. E. W. Mitchell.
28 A Case of Injury of the Head. Geo. J. Monroe.

### Boston Medical and Surgical Journal, December 19.

29 *A Discussion of the Relation Between Human and Bovine Tuberculosis, with Special Reference to Primary Infection in Children Through the Alimentary Tract. A. D. Blackader.
30 *On the Necessity for Special Study and Experience in Treating Children. Frederick A. Packard.
31 Notes on X-Light: Radiable Windows in X-Light Tubes. William Rollins.
32 The Formation of Cysts in the Faucial and Pharyngeal Tonsils. J. L. Goodale.
33 Acute Intestinal Obstruction. Homer Gage.

### Medical News (N. Y.), December 21.

34 *Report of the Committee of Seven on the Prophylaxis of Venereal Disease in New York City.
35 The Medical Society of the County of New York and Its Objects. Frank Van Fleet.
36 *Three Points in the Treatment of the Deformities of Infantile Paralysis. John L. Porter.
37 *Artificial Milks. Louis Kolipinski.
38 *On the Biologic Relationship of Proteids. P. A. Levene.

### St. Louis Medical Review, December 21.

39 An Outsider's Glimpses of Neurology. Joseph Grindon.
40 Operation for Obstruction of the Bowels, Caused by Enterolith, Complicated with General Peritonitis. R. E. Wilson.

### American Practitioner and News (Louisville, Ky.), November 1.

41 Present Status of Blood Examination. Sidney J. Meyers.
42 The Therapeutic Value of Alcohol. Leon L. Solomon.

### Bulletin of the Johns Hopkins Hospital (Baltimore), November.

43 *Congenital Absence of the Abdominal Muscles, with Distended and Hypertrophied Urinary Bladder. William Osler.
44 *On a Family Form of Recurring Epistaxis, Associated with Multiple Telangiectases of the Skin and Mucous Membranes. William Osler.
45 *On the Behavior of Epinephrin to Fehling's Solution and Other Characteristics of This Substance. John J. Abel.
46 *Osteitis Deformans with Report of a Case. Arthur W. Elting.
47 *Tubercular Dacryo-adenitis and Conjunctivitis, Containing the Report of a Probable Case Ending in Spontaneous Recovery and a Review of the Previous Literature on Tubercular Dacryo-adenitis. Edward Stieren.

### Richmond Journal of Practice, November.

48 *Past, Present and Future of Cancer. Stuart McGuire.
49 Spina Bifida. J. W. Henson.
50 Gastrostomy and Retrograde Dilatation in Impermeable Benign Traumatic Stricture of the Esophagus, and Internal Esophagotomy by the Abbe Sawstring Method. Hugh M. Taylor.

### Denver Medical Times, December.

51 *Mother's Milk. Edward C. Hill.
52 Ocular Lesions of Smallpox. Edward Jackson.
53 "What Is Sauce for the Goose is Sauce for the Gander." Will B. Davis.
54 *Changes Necessary to Secure Interstate Medical Licenses. John A. Donovan.
55 Serum Therapy in the Treatment of Disease. Wm. Dow.
56 New Treatment of Leucorrhea and of Gonorrheal Vaginitis. Ph. Chapelle.

### Indiana Medical Journal (Indianapolis, Ind.), December.

57 *The Present Status of Diphtheria. W. T. S. Dodds.
58 Ringworm and Favus. A. D. Mewborn.
59 *Malaria Following Abdominal Operations. J. T. Freeland.
60 Gunshot Wounds of the Abdomen—Recovery Without Operation. Edmund D. Clark.

### Medical Dial (Minneapolis), December 1.

61 The Discreet Nurse. J. W. MacDonald.
62 Naso-Pharyngeal Catarrh a Common Cause of Middle-Ear Deafness. W. H. Cooke.
63 The Various Methods of Producing Anesthesia. E. Laval.
64 Modern Treatment of Syphilis. M. Shellenberg.
65 Some Remarks on the Etiology of Apoplexies. W. K. Walker.
66 Treatment of Blood Poisoning. J. Bryon Sloane.
67 A Case of Tetanus Successfully Treated with Antitetanic Serum. R. Graham.

### Medicine (Detroit, Mich.), December.

68 *Study of a Typhoid Fever Epidemic. B. K. Rachford.
69 *Degeneracy and Political Assassination. Eugene S. Talbot.
70 A Case of Adiposis. Augustus A. Eshner.
71 Treatment of Abortion. Charles B. Reed.
72 Dilating Irrigations in the Treatment of Chronic Gonorrhea. E. A. Fischkin.

### Columbus Medical Journal, November.

73 What You Can Learn by the Study of the Urine Without a Microscope. D. N. Kinsman.
74 Report of Cases Showing the Value of Analyses in Diseases of the Stomach. John Dudley Dunham.
75 Exophthalmic Goiter, with Report of a Case. Howard Whitehead.
76 Report of Cases, with Specimens. W. D. Hamilton.
77 Persia and Her Doctors. Yacob A. Sargis.

### University of Pennsylvania Medical Bulletin (Philadelphia), November.

78 *The Blood in Infancy and Childhood. Alfred Stengel and C. Y. White.
79 Papilloma of the Carbuncle, with Report of a Case. William C. Posey and Edward A. Shumway.
80 *A Bacteriological Study of Dissecting-Room Cadavers. Nathaniel Gildersleeve.
81 Some Notes on the Recovery of Mercury from Animal Tissue. Edwin M. Stanton.
82 *Natural Method of Draining the Peritoneal Cavity. John G. Clark.

### Pacific Medical Journal (San Francisco), December.

83 Abdominal Section—The Care of the Patient Before, During and After Operation. Winslow Anderson.
84 The Present State of the Bottini Operation, with Special Reference to Personal Experience. M. Krotoszyner.

### American Medical Compend (Toledo, Ohio), December.

85 Appendicitis with Report of Cases Operated. William J. Gillette.
86 The Selection of a General Anesthetic for Brief Narcosis. L. M. Dolloway.
87 Jurisprudence—An Explanation. J. T. Woods.
88 Aspirin in Ophthalmic Practice. B. Wicherkiewicz.
89 Cholera Infantum. C. M. Deibert.
90 A Remedy Proposed for the Evil of Substitution. J. D. Williams.

### Medical Council (Philadelphia), December.

91 Briefs on the Surgery of the Genito-Urinary Organs. G. Frank Lydston.
92 A Case of Tubal Pregnancy. Benj. Edson.
93 Disorders of the Sexual Function in Man—Bubo. A. H. P. Leuf.
94 The Injection Method for the Relief and Cure of Hernia. C. Fletcher Souder.
95 Medical Practice Among the Caroline Islanders. Edward E. Hyde.
96 The Injection Treatment of Hemorrhoids. Henry M. Woolman.
97 An Interesting History of a Case of Typhoid Fever. E. P. Bernady.
98 Fluoroformol (Aqua Fluoroformi). M. Loewenthal.

### The Laryngoscope (St. Louis), November.

99 *Vocal Nodules. Charles H. Knight.
100 The Nose and Throat in the History of Medicine. (Continued.) Jonathan Wright.
101 *Some of the Bacteria Found in the Nose. Samuel Iglauer.
102 Edema of the Larynx. H. E. Smyth.
103 Iodated Milk (Sclavo) in Rhino-laryngeal Therapeutics. Gherardo Ferrarri.

### Kansas City Medical Index-Lancet, December.

104 Scientific Research—The Indispensable Basis of All Medical and Material Progress. George Bagot Ferguson.
105 A Visit to Some of the European Eye Hospitals. Willis O. Nance.
106 A Visit to Las Vegas, New Mexico. B. H. Ewart.

107 Reminiscences of a Recent Trip Abroad, Including Visits to the London, Paris, Berlin, etc., Hospitals, Clinics, Medical Museums and Libraries, as Well as to the British Medical Association. (To be continued.) John Punton.

Maryland Medical Journal (Baltimore), December.

108 *Hydrocyanic Acid Gas in Public Health Work. John S. Fulton and Wm. R. Stokes.
109 The Treatment of Consumption in Local Sanatoria. Henry B. Jacobs.

Atlanta Journal-Record of Medicine, December.

110 The Diagnosis and Treatment of Human Actinomycosis, with Report of Two Cases. William H. Hudson.
111 Mastoid Disease, Differential Diagnosis, Examination; When We Should Operate? F. Pierce Hoover.
112 A Child One and a Half Years Old with a Single (4-Penny) Nail in Its Windpipe—Some Other Cases of Foreign Bodies in the Trachea and Esophagus Reported. Wm. Lewis Bullard.
113 Anesthesia. G. P. Haymore.
114 Carbolic Acid and Tansy Poisoning. Charles E. Boynton.

Interstate Medical Journal (St. Louis), December.

115 *Some Facts About Tetanus-Antitoxin. C. Fisch.
116 *An Historical Résumé of the Procedures Intended for the Repair of Cleft Palate with Mention of a Case. Willard Bartlett.
117 A Case of Nephrectomy, with Drainage for Tuberculosis of the Right Ureter—Secondary Nephrectomy—Apparent Cure. H. McC. Johnson.

Vermont Medical Monthly (Burlington), October 25.

118 Pulmonary Tuberculosis—A Brief Consideration of Its Etiology, Symptomatology, Diagnosis, and Treatment. H. Edwin Lewis.
119 A Third Report on Aspirin. Karl Manasse.

International Journal of Surgery (N. Y.), December.

120 *The Skull and Its Contents. W. H. Earles.
121 Nose and Throat Work for the General Practitioner. (Continued.) George L. Richards.
122 Appendicitis. Wm. D. Middleton.
123 A New Operation for Uterine Ventrosuspension. Wilbur F. Sterman.
124 Enormous Hypertrophy of the Prostate in the Absence of Testicles Since Early Infancy. J. E. Miller.
125 Three Cases of Appendicitis with a Moral. Courtney L. Smith.
126 Prevention of Nausea and Vomiting Attending Anesthesia. G. B. N. Clow.

New Orleans Medical Journal, December.

127 *The Effect of Alcohol on Digestion. J. A. Storck.
128 A Parasite of the Common Night-Mosquito (Culex Pungens). Henry B. Orr.
129 Otitis Media Neonatorum. O. Joachim.
130 Briefs on the Surgery of the Genito-Urinary Organs. G. Frank Lydston.

New England Medical Monthly (Danbury, Conn.), December.

131 The Case of President McKinley.
132 Report of the Autopsy. Harvey R. Gaylord.
133 Report of the Bacteriologic Examination. Herman G. Matzinger.
134 The Treatment of Uric Acid Poisoning—With Clinical Reports. Robert C. Kenner.

Medical Review of Reviews (N. Y.), November 25.

135 *Dandruff: Its Limitations and Complications. Isadore Dyer.

Medical Standard (Chicago), December.

136 The Commoner Diseases of the Eye: How to Detect and How to Treat Them. Casey A. Wood and Thomas A. Woodruff.
137 A Surgical Clinic (Exstrophy of Bladder, etc.) N. Senn.
138 Typhoid Fever; Prognosis and Prophylaxis. J. T. Moore.
139 Chronic Eczema Madidans. N. E. Aronstam.
140 The Anatomy and Physiology of the Brain and Nervous System. Herman Gasser.
141 Gunshot Wounds of the Chest; With a Report of All Such Cases Treated at the Cook County Hospital from Jan. 1, 1898, to Nov. 15, 1901. Aime P. Heineck.

Alabama Medical Journal (Birmingham), December.

142 President's Address—Medical Man and His Education. M. C. McGanon.
143 Brain Softening. Michael Campbell.
144 An Operation for Tubal Pregnancy, Complicated with Appendicitis and Fibroid Tumors of Uterus. Pugh U. Brown.
145 A Case of Chorea. F. B. Sloan.

## AMERICAN.

1.—See abstract in THE JOURNAL of November 9, vol. xxxvii, p. 1266.

5.—See THE JOURNAL of December 7, vol. xxxvii, p. 1536.

6. **The Alleged Vaccine and Antitoxin Tetanus Cases.**—Dalton condemns the method of municipalities going into the business of the manufacture of antitoxin. He thinks the lesson we have principally to learn from these catastrophes is the necessity of eliminating commercialism from matters pertaining to the public health. It is false economy, to say nothing of the kind of humanity, if we do not deal with the public as with one of our own household. Boards of health should avoid scrimping economy and see that none but reliable preparations are used and should have special care for the enforcement of regulations surrounding with all possible safeguards the manufacture and sale of such articles as antitoxin and vaccine virus.

7. **Bright's Disease.**—In a former paper Edebohls advanced the proposition of the surgical treatment of Bright's disease and detailed his method. He has since operated by decapsulating the kidneys in a number of cases of chronic diffuse or interstitial nephritis and gives a table of eighteen operations. The details of some of these cases are given in the body of the article and the results in all are analyzed and discussed. The operation, he says, is not new. It has been employed by Rose and quoted by Wolff, Ferguson and occasionally by the writer as a part of the technique of nephropexy. He believes he has shown that chronic Bright's disease is curable by operation and that the present state of our knowledge does not warrant us in defining accurately the limits beyond which operation is not longer available. As a result of his experience he is prepared to operate on any case of chronic Bright's disease without incurable complications or those forbidding the use of anesthesia, and in which the probable expectation of life without operation is not less than one month. The operation is not directly and forthwith curative of Bright's disease, but it leads to a cure or improvement by establishing proper circulatory conditions.

8. **The Stomach Tube.**—Crenshaw recommends the freezing of the extremity of the stomach tube to cause temporary anesthesia in its introduction, and thus avoid nausea, gagging, etc. Freezing of the extremity of the tube has proven more satisfactory than other methods in his experience.

10. **Perineal Laceration.**—The method suggested by Norfleet is the use of anesthesia during the stormy pains. As the second stage comes on, give the patient a whiff or two of chloroform and when the head comes down enough to separate the vulva, give the chloroform to a reliable assistant and watch. When the occiput is well hooked under the pubic arch, the pain brings the extending head so far forward that the fingers feel the forehead slip under their control. At once give the word for full chloroform, and with the help of the left fingers on the child's occiput hold the head still until relaxation takes place; then slowly shell the head out by pressure on the forehead. Take plenty of time and allow the perineum to stretch as much as possible. As soon as the head is fairly out, do away with the chloroform altogether.

14.—See abstract in THE JOURNAL of November 16, vol. xxxvii, p. 1338.

15. **Methyl Alcohol Blindness.**—From a review of the literature and his own observations, Würdemann concludes that ingestion of methyl alcohol by the mouth or inhalation of its vapor has produced a sudden and in most cases complete characteristic type of blindness, tending later to partial recovery. Without a history, or long observation, it would not be possible positively to diagnose this cause, but the physician may be positive, if the case follows ingestion or inhalation of methyl alcohol with symptoms of vertigo, nausea, vomiting, etc., and with the objective appearances of immobile pupils, whitening of disk, etc., that methyl alcohol is the responsible factor.

18. **Blood Examinations.**—Kalteyer criticises the article of Deaver and Moore, published in the *Philadelphia Medical Journal* some weeks ago, in which he thinks they undervalue the importance of blood examinations for diagnosis.

19. **Hepatic Drainage.**—The importance and significance of gall-bladder disease are insisted on by Deaver and Moore, who maintain that gall-bladder surgery ought not to be relegated to

last resort procedures, but should be used when there is a tendency to recovery from the disease. If there is any marked change in the gall-bladder it is best to remove it. It is an organ of very little functional importance in the human race, and they think the day will come when the removal of the diseased gall-bladder will be considered nearly as necessary as removal of the appendix in appendicitis.

20. **Smallpox.**—The initial symptoms of recent cases of smallpox are discussed by Welch and Schamberg, who interrogated 100 patients in the Municipal Hospital of Philadelphia. The number includes 28 cases of confluent variola, 15 cases of profuse and semi-confluent eruptions, 29 eruptions of moderate severity, and 29 cases of mild varioloid. Of the 100, 22 died. Headache was the most constant of the initial symptoms. Various symptoms were present in the following percentages: Headache, 86 per cent.; chills or chilliness, 78 per cent.; backache, 70 per cent.; vertigo, 57 per cent.; vomiting, 55 per cent.; with nausea in 10 per cent. more. Chill was the first symptom in 35 cases; headache in 26; backache in 16; vomiting in 9; vertigo in 2 and general aching and pain were first in 2. In only 2 cases of the 100 was there complete absence of initial illness. One of the two admitted experiencing fatigue the day preceding the eruption. In several cases the initial illness was well marked, though not always with typical symptoms. They call attention to the fact that in a large percentage of cases admitted during the year the initial symptoms were interpreted by the physicians previously in attendance as the early manifestations of typhoid fever.

21. **Bladder-Descent and Sacculation.**—The operative procedures adopted by Shoemaker for bladder-descent in procidentia can all be done at one sitting if the patient can endure the anesthesia long enough. They are first curetting the uterus, then stripping out the hypertrophied cervix for one or two inches from the bladder in front, from peritoneum behind, and from the broad ligaments at the sides; thorough ligation of the lower lateral uterine blood supply to bring about involution of the uterus; amputation of the cervix at a point regulated by the amount of tissue hypertrophy; attaching the vagina higher up to the uterus; taking in all slack in the anterior vaginal wall, thorough repair of the perineum, with special care to pick up the lateral fasciæ. As a final step the abdomen is opened and the uterus suspended, and firmly attached to the anterior abdominal wall in women beyond the child-bearing period. In young women a light attachment is made well in front of the plane of the cornua. This, he thinks, is the most satisfactory series of operations yet devised and rarely fails to cure the procidentia and the bladder prolapse as well. In well-marked cases no one of these procedures can be omitted, though probably the suspension can be first withheld as the cases lessen in severity. He specially calls attention to the method of taking up the redundant anterior vaginal wall and supporting the bladder. The normal attachment of the anterior vaginal wall of the pelvic fasciæ is mainly at the sides, the attachment to the bladder along the median line being by loose areolar tissue which can be readily separated by the knife handle. The best method is to cut out completely all of the anterior vaginal wall down to the loose areolar tissue underlying the bladder. Inspection will show where the greatest stretching has taken place. A free incision is made directly down to the bladder wall in the median line, extending from the cervix forward as far as any widening has occurred. With the knife handle and a few snips of the scissors the bladder is then peeled off the vagina freely right and left, few vessels requiring temporary clamping, usually none. The flaps are then trimmed away on both sides with the scissors until, when their edges are brought together in the median line, all redundant tissue has disappeared. The opening may be oval or it may be broader near the cervix than at any other point, according to the location of the greatest relaxation. Two or three continuous rows of fine cumol catgut are inserted and buried one over the other, running from before backward in the cellular tissue underlying the bladder or in the wall of that organ. They serve to obliterate dead space and firmly unite all portions of the wound surface except the cut vaginal edges. These are best held together by a continuous fine silk suture, which alone pierces the vaginal mucous membrane. When finished, the direction of all these rows of sutures is from before backward. All bleeding is stopped by the suturing and no ligatures are required. Primary union is always obtained, as the operation is done under a continuous stream of water, and only instruments are brought in contact with the wound. Where there is much separation of the whole vagina from the pelvic fasciæ, the greatest care must be taken in operating on the posterior vaginal wall and perineum to catch the fascia in the stitches. The operation in these cases must always include very thorough perineal repair, the method of Emmet being preferred.

22. **Rectal Temperature in Tuberculosis.**—Braine-Hartnell concludes that: 1. In many cases the oral and axillary temperature records are untrustworthy. 2. In a few cases there is very little difference between the rectal record and the oral record. 3. The greatest discrepancy is found in the lower range of the temperature and conversely the greatest similitude in the higher ranges. 4. The rectal temperature gives in almost every case a truer idea of the amount of pyrexia. 5. If we wish to do ourselves, our patients, and our treatment justice we should insist on taking the temperature in the rectum.

24. **Antrum Disease.**—The following are the conclusions of Pierce's article: 1. That there is strong evidence to warrant the belief that in diseased antra accessory openings are more frequently found than in healthy antra. 2. That in a certain number of cases the ostium may be used to irrigate the antrum. 3. That we should in all cases, whether for diagnosis or treatment, try for the ostium or accessory openings before resorting to surgical puncture, whether through the inferior or middle meatus, the canine fossa or alveolar process. 4. That it is of no importance whether the opening through which we irrigate be the ostium or an accessory opening.

27. **Serum Therapy.**—The new antitoxic treatment of diphtheria is endorsed absolutely by Mitchell, who thinks that in it we have the means of controlling the disease. He believes in larger dosage of antitoxin. In patients over one year he gives from 2000 to 6000 units for the first dose, according to the age and the severity of the case. Under 1 year 500 to 1000 units in mild cases, 1000 to 2000 in severe cases, with the addition of 500 to 1000 in twelve hours if improvement is not marked. Of course, the most rigid aseptic precautions must be used. Experiments have shown that giving antitoxin by the mouth and by the rectum has a specific effect, but he considers that only in exceptional circumstances should it be thus given. The collected statistics of the serum treatment of tetanus show some lowering of mortality. In pneumonia the serum treatment is still *sub judice*. The reports on antistreptococcic serum are somewhat conflicting, some cases seem to respond with immediate improvement and recovery, while in others no results are obtained. This he thinks may be explained by the existence of different forms of streptococci and that the antitoxin of one may not be sufficient against that of the others. Reports of serum treatment of tuberculosis are too vague yet to be considered, and he doubts if a curative serum will be found. Plague, glanders and cholera have all been treated by serum-therapy with encouraging success.

29. **Human and Bovine Tuberculosis.**—Blackader gives first the history of the recognition of the differences between human and bovine tuberculosis, and clinical facts bearing on the intertransmission in the two forms. He thinks that the profession has unfortunately exaggerated the danger from ordinary milk. It has been misled perhaps by the frequency in which the bacilli have been reported to have existed, for many investigators have mistaken other acid-fast bacilli for true tubercle germs, and we have also been unduly afraid of a few bacilli in otherwise normal milk. There is, he thinks, little doubt that small numbers of tubercle bacilli can be introduced into the stomach with impunity, and it must be remembered also that tubercle bacilli do not develop in the milk as do many other micro-organisms, and their virulence is inhibited by

the many modes in which milk is prepared. He quotes Adami, who suggests that there may be a difference in the virulence of tubercle germs at different times which will account for some of the cases of infection described. He also, in conclusion, refers to Kossel's investigation, who found about 40 per cent. of children affected with latent tuberculosis of the glands or elsewhere. While we have given all the credit for apparent immunity in so many cases to environment and the general state of the health, it is also possible that we should consider the source from which the bacilli originally come in some cases.

30. **The Treatment of Children.**—Packard makes a number of points in regard to the difference in the medical treatment of children and adults. In the first place children can not give their subjective symptoms. We have to depend more on our own examination and we must not forget that the child is not a man cut down. Much may be learned by close observation of attitude, the character of the cry and respiration, the facies, and examination of the fontanelle as a routine matter. He points out some ways in which he thinks we are misled in estimating the frequency of certain diseases in children, for example, typhoid, where the typhoid tongue as seen in the adult is not ordinarily met with. We must also avoid falling into error in examining the chest of children, as the position of the apex beat is quite different, being higher and the second sound in the pulmonary area is louder and more clearly defined than in older persons. He also found a curious square area of dulness at the extreme left chest, posteriorly, closely resembling what has been described by Ewart as a sign of precardial effusion. He thinks the left lobe of the liver may possibly be responsible for it. The physical signs are often quite different in children and in adults; thus the cracked-pot sound can be readily developed on percussing over the healthy lung in an infant. Croupous pneumonia is another disease in which there is a great difference between children and adults, and he thinks we see much more frequently silent pneumonias and noisy pleurisies. The examination of the abdomen even offers more peculiarities than the chest. The normally large liver is one point he refers to. As regards the nervous system he refers to three points, the absence of Kernig's sign, which seems to have no significance, the slight value of the Babinski reflex and the ease in which lumbar puncture can be performed. The question of prognosis is a matter of importance. Children recover rapidly; they also die suddenly. The toxin elimination may be presumed to occur with greater facility than in the adult, and the heart has greater reserve force and reparative power than has the heart in older persons. He speaks next of the necessity of individualism in milk modification for infant food, the dangers of the routine treatment of digestive troubles, the too frequent diagnosis of intestinal parasitism, the impropriety of slitting the frenum of the tongue and the indiscriminate use of braces in rickety children, also the importance of retropharyngeal abscess, the relative easy vulnerability of the endocardium in the child, the variability of symptoms of malarial infection, etc.

34.—See THE JOURNAL of December 7, vol. xxxvii, p. 1536.

36. **Infantile Paralysis.**—The three points emphasized by Porter are : 1. The most effective treatment of deformity resulting from infantile paralysis is preventive treatment. Infantile paralysis is the cause of about 25 per cent. of the deformities that come to the orthopedic clinics. 2. Every case of paralytic deformity, however slight or severe, can be improved to some extent by appropriate treatment. 3. Simple tenotomy of the shortened tendons in these cases is of great benefit aside from the release of tension and improvement of function that result.

37. **Artificial Milk.**—The artificial milk formula recommended by Kolipinski as approximately representing the normal article, by having the proper percentage of salts and water; by being cheap, and readily prepared; the ingredient easily obtainable, fresh and sterile and the mixture palatable, is as follows: Extract of malt (syrupy), one tablespoonful; olive oil, one tablespoonful; roasted flour, two teaspoonfuls; one broken raw egg. Beat up in a bowl or dish with a spoon or eggbeater for three or four minutes and add by degrees, while stirring, a tumblerful of pure, cold drinking water. Season with table salt. To be taken one or two hours after meals. In hot weather use crushed ice or prepare the whole in a milk shaker. This formula may be varied to meet any condition required. The flour may be increased or diminished. The olive oil may be replaced by some other fat or fixed oil. Unsalted butter and chocolate may be worked in. The flavor is good and the after-taste pleasant. He reports a number of cases where good results followed the use of this milk substitute.

38. **Biologic Relationship of Proteids.**—Levene in this preliminary communication reports that he has followed up Uhlenhuth's researches and finds results in accordance. They indicate that chemically differing proteids are derived from the same or closely related animals and have the power of producing similar precipitates when injected into animals. It seems probable that human milk could be used for obtaining serum for the detection of human blood. He has "immunized" rabbits with milk and found that their serums will form precipitates with milk, casein, milk albumin and beef serum, though it fails with white of egg, egg albumin, egg globulin, chicken serum, etc. On the other hand animals that had received injections of the white of the egg for two months, will form precipitates with egg albumin, egg globulin, the yolk of the egg, with chicken serum, etc., and also fail to react with the milk proteid and beef serum.

43. **Congenital Absence of Abdominal Muscles.**—The case reported by Osler is remarkable. There was complete absence of abdominal muscles, showing movements of the intestines directly on the abdominal wall, which had no resistance whatever, and allowed direct palpation of the various organs beneath. There was also associated with it thoracic deformity and cryptorchidismus, and the bladder when dilated filled the hypogastric and also the umbilical region. It was impossible to see whether the bladder was adherent to the umbilical scar as in Guthrie's case, one of the two similar ones heretofore reported. In reply to a question, Dr. Bardeen, one of the associates in the Anatomical Laboratory of the Johns Hopkins University, who has been specially engaged in a study upon the development of the muscles, writes as follows: "1. It is possible that the lack of resistance normally met with in the abdominal wall by the bladder at the time the kidneys begin to secrete urine may cause the bladder to expand rather than to empty secretions into the amniotic cavity through the urethra. 2. Under normal conditions the growth of the abdominal musculature into the *membrana reuniens*, the early covering of the abdominal cavity, is preceded by the formation of a vascular plexus supplied from above by the internal mammary, from below by the epigastric artery. It is possible that an abnormal arrangement of the blood vessels in the embryo prevented the formation of this plexus, and impeded the growth of the abdominal musculature, and that at the same time circulating disturbances gave rise to the abnormal conditions found in the bladder and ureters."

44. **The Family Form of Recurring Epistaxis.**—Osler reports cases of a special form of recurring epistaxis associated with multiple small angiomas on various parts of the skin. Two of them were brothers, showing the family relation of the disease. The father and two sisters had also been noted bleeders. One of the patients had a child who presented this defect, and a grandniece, a granddaughter of the patient's elder sister, was also subject to frequent epistaxis. The third case was of a different family, with no history of any other members suffering in the same way. The paper concludes with remarks on angiomata.

46. **Epinephrin.**—Abel has investigated the chemical behavior of epinephrin, the blood-raising constituent of the suprarenal gland, and offers, in part, the following conclusions: 1. Epinephrin in its native state easily reduces silver nitrate and other metallic salts, but fails to reduce Fehling's solution. On being treated with hydrogen sulphide or with hydrochloric acid and tin in the proper medium, or on sapon-

fication of its benzoyl or acetyl derivatives in the autoclave, it becomes an energetic reducing agent for copper solution and shows an alteration in other properties. It is not quite so easily oxidized on the addition of dilute ammonia, and is more easily crystallized. 2. The commercial preparation known as adrenalin also reduces copper sulphate. It is apparent from the analytical data furnished by Aldrich that this substance is a mixture and not a chemical individual. The proposed formula $C_9H_{13}NO_3$, does not coincide with the analytical data furnished by Aldrich, and no rational formula is deducible from them. It is probably a mixture of native and reduced epinephrin with traces of foreign substances rich in nitrogen. It is hoped that a better purification, together with an analysis of its derivatives, will result in a closer approximation to the formula $C_{10}H_{11}NO_3$, which applied to reduced epinephrin, as contained in the writer's series. 3. The series of epinephrin compounds described by the writer in previous papers, have one and all retained a single benzoyl radicle, in consequence of the incomplete saponification of the original benzoyl derivative. This could not be determined with certainty until the substance was isolated by methods which avoided the process of benzoating. The epinephrin, $C_{17}H_{15}NO_4$, of his former papers was therefore in reality mono-benzoyl epinephrin, and in consequence of its ability to reduce the alkaline copper sulphate it may be further designated, reduced mono-benzoyl epinephrin. Further conclusions given show that the statement of V. Furth as to the equivalents of the substance under discussion are not correct..

46. **Osteitis Deformans.**—This condition is quite thoroughly discussed, together with a report of cases, by Elting, whose conclusions are that osteitis deformans is a chronic condition of the bone, developing in middle life or later, and is of more frequent occurrence than is generally supposed. The onset is insidious sometimes in a single bone, but usually tends to be symmetrical. There is a special tendency to involvement of the tibia and femur as well as of the frontal, occipital and parietal bones. It attacks both sexes and does not appear to be related to any constitutional disease. Its etiology is not understood. It requires from five to fifteen years to reach its maximum development. It is characterized by hypertrophy and deformity of the bone involved, either with or without pain. Microscopically it is characterized by a rarefying osteitis combined with new bone formation. The duration of the disease is indefinite. It has but comparatively little influence on the general health and is not a direct cause of death. The treatment must be purely symptomatic.

47. **Tubercular Dacryo-Adenitis.**—The title of this article gives it substance in brief, but the conclusions are as follows: "1. Tuberculosis of the conjunctiva may be either ectogenous or entogenous; tuberculosis of the lachrymal gland must be hematogenous. 2. The presence of the tubercle bacillus in tuberculous conjunctivitis and tubercular dacryo-adenitis is not a *sine qua non* of the disease. In the present case, repeated examination of the matter from the ulcers of the conjunctiva failed to show the presence of tubercle bacilli, nor did inoculation in animals produce the disease. Burnett speaks of a case he observed for more than a year in which the clinical picture was one of tuberculosis of the conjunctiva, and yet he could not find a single tubercle bacillus after repeated examinations; inoculation in rabbits likewise proved negative. 3. Tubercular dacryo-adenitis and conjunctivitis may undergo cure; surgical intervention is indicated only after therapeutic and proper hygienic measures fail, since it is a universally recognized fact that tuberculosis in other parts of the body is often cured outright spontaneously, the cure being effected by a marked increase of connective tissue."

48. This article has appeared elsewhere. See THE JOURNAL of December 12, vol. xxxvii, title 160, p. 1701.

51.—See abstract in THE JOURNAL of July 13, vol. xxxvii, p. 137.

54.—Ibid., September 28, p. 852.

57. **Diphtheria.**—The summary of Dodd's discussion is that diphtheria is a practically controllable disease. The diagnosis can be always correctly made and with antitoxin we can save 86 per cent. of all cases, and even a much higher percentage in private practice. It should be given at the earliest possible moment, in one dose sufficient to protect the cases. It is not a medicine of last resort.

59. **Malaria After Abdominal Operations.**—Freeland calls attention to the complication of malarial fever after laparotomy in malarial districts, which may lead the surgeon to credit to serious complications what is really due to infection, and recognition of this fact will sometimes clear up very satisfactorily rather threatening cases. His conclusion is that after abdominal or other major operations in malarial districts, the patient should be put on quinin and its administration kept up until recovery from the effects of the operation.

68. **Typhoid Fever.**—Rachford reports the history of a typhoid epidemic occurring in a hotel and some adjoining cottages in a watering place in Northern Michigan. A careful study of the conditions showed defective outside plumbing leading to sewage contamination of the water supply.

69. **Degeneracy and Assassination.**—Talbot reviews the history of regicides and other assassins and would-be assassins of prominent individuals, giving portraits from the best sources, including the more recent cases of Luccheni and Czolgosz. He thinks that in most of these cases the moral imbecile element was not specially prominent, excepting in Guiteau and Clement. The frequency of facial and other stigmata is rather striking in assassins whose crimes seem to be the direct outcome of their environment. The frequency of kephalonic and allied types of skull is also striking. The uselessness of capitol punishment is, he thinks, evident. As regards Czolgosz himself, he says there is no reason to believe him insane, but the logic employed to prove his sanity was not altogether scientific.

78. **Blood in Infancy and Childhood.**—Stengel and White describe the conditions of the blood found in normal infancy as regards the proportion of erythrocytes, hemoglobin, leucocytes, specific gravity, etc., and then take up the pathologic conditions. The article is too detailed to be abstracted. Illustrative cases are reported.

80. **Cadaveric Bacteria.**—Gildersleeve has investigated a number of cadavers which had been embalmed or injected and placed in protective solution for dissecting purposes. Some of these had been in cold storage vaults at a temperature of 15 F. and four had been kept in sodium chlorid vats. Bacteriologic examinations were made on the oral and nasal cavities and the skin in 8 subjects. The internal organs of the 4 subjects kept in salt solution and 19 of the cases kept in cold storage were examined also bacteriologically, both of the microscope and culture methods. Some of the results seemed extraordinary. For instance, 6 of the subjects that contained active virulent tubercle bacilli had been in cold storage between three and six months, and 2 had been in sodium chlorid vats for one to six months. The cultures were made from the caseous glands in the four tuberculous cases and staphylococcus aureus and albus found. A number of other bacilli were recognized in cultures, such as bacillus mesentericus fuscus, bacillus subtilis, staphylococcus epidermidis albus, staphylococcus pyogenes albus. These were found in the muscles of the arms and legs of three subjects which had been kept in sodium chlorid vats for 1, 4 and 6 months respectively. Lung cultures developed living bacilli in a subject who had been in sodium chlorid for four months and various other growths were obtained from the intestines, liver, spleen, gall-bladder, etc. The investigations were conducted under customary aseptic precautions and it is, as he remarks, somewhat astonishing to discover living infective organisms, such as living tubercle and staphylococcus aureus, in embalmed bodies six months after their deposition in vaults.

82. **Drainage of Peritoneum.**—Clark concludes that the peritoneum has an enormous absorbent power, being capable of taking up within an hour 3 to 8 per cent. of the entire body weight, and a number of solid particles are carried in a re-

markably short time from the peritoneal cavity through the diaphragm into the mediastinal lymph vessels and glands, and thence into the blood circulation. They are often largely transported as free bodies, swept along by the lymph currents, but later the leucocytes act as the carriers. There is, normally, a force in the peritoneal cavity which carries fluids and foreign particles toward the diaphragm regardless of posture, though it may be aided or retarded by gravity. The micro-organisms introduced into the peritoneal cavity are greatly reduced in number within the first hour, both by intra-peritoneal destruction and their rapid absorption into the general system. There is, therefore, no possibility of limiting free infectious matter to any part of the peritoneal cavity by mechanical means. Vigorous streptococci which remain behind develop within six hours a repellant or destructive quality of leucocytes, and the lethal combat is, therefore, inaugurated and well under way before drainage, as ordinarily employed, can possibly exercise any good effect. In many cases, therefore, where surgical drainage is employed the patient recovers in spite of, and not because of it. A moderate amount of even virulent organisms, carried by the blood to the lungs, liver, spleen, kidneys, gastro-intestinal tract, and bone-marrow, may be destroyed or eliminated without the least harm to the patient, whereas, if the same amount of infectious matter is detained about a surgical field in the abdominal cavity, or stagnates in a dependent pocket, they may generate myriads of others, and thus overwhelm the patient. Drainage, therefore, as ordinarily employed, is superfluous in many cases and even dangerous. The rational method is to remove all possible debris or infectious matter by thorough irrigation and then leave one liter of salt solution—0.6 of 1 per cent.—in the abdominal cavity, in order to promote and hasten natural drainage, supplemented by an enema of a liter of salt solution given while the patient is well under anesthesia in the Trendelenburg position. Under this plan the patient is greatly stimulated, shock is minimized or averted, the urinary excretion is greatly increased, and thus toxic matters are more easily eliminated without irritation to the kidneys or bladder; peritoneal infection is more quickly eliminated while yet minimum in amount; thirst is alleviated, or entirely prevented; intestinal peristalsis is promoted, and tympanitis less frequent. The early action of the intestines evacuates infectious matter thrown out into the canal by the blood-vessels of the villi. All these factors combine to reduce mortality after abdominal sections, to decrease the pain, discomforts and complications of the first forty-eight hours, and hasten the recovery. Peritoneal infusions may be dangerous in cases of ascites accompanying surgical lesions, which indicates that the natural peritoneal drainage is already deficient; therefore, to add an additional burden through the saline infusions is certainly not advisable. In general purulent peritonitis he believes that gauze packing is indicated in apparently few cases and often where it can be used, painstaking technique will reduce the necessity. He would use it in appendicitis, when there is infiltration of the adjoining tissue and peritoneum and in localizing collections of pus in the pelvis. Such cases are specially those for incision and drainage through the vagina. Suture of intestine, excision of fistulous tracks leading from the intestines to the abdominal wall, and purulent peritonitis are also conditions in which drainage through the genital tract may be advisable.

99. **Vocal Nodules.**—Knight has had the opportunity of seeing vocal nodules developing almost under his eye, and it has suggested to him several perplexing questions. The growth appeared rather suddenly after over-exercise of the voice, and treatment was ineffective until vocal exercises were tried together with inhalation of adrenalin chlorid—1-5000—when there was some very apparent improvement. He theorizes somewhat in regard to the cause and suggests the possibility of minute localized hemorrhages or of fibrous contraction of certain bundles of fibers; the overstrain of the cords might lead to an effort of nature to fortify the region of their exercise by throwing out new tissue. The idea that attrition of the vocal bands is accountable for the nodes seems to him untenable for the reason that during phonation space must remain between the bands in order to permit the blast of air. Moreover, the node often has its origin, as in this case, on the upper surface of the band. If his theory is correct, the obvious conclusion is that a faulty method of phonation is generally induced by some anomaly in the upper air tract, and can be overcome only by restoring the latter to a normal condition. In excising or destroying the nodule we remove the result and not the main cause of the difficulty.

101. **Bacteria in the Nose.**—Iglauer, who has examined nasal cultures from a number of cadavers and who has studied the literature, comes to the conclusion that the normal nasal mucus contains bacteria, but that they can not be so abundant as we would suppose from the number of bacteria inspired, for the following reasons: The surface over which the bacteria is scattered is rather large. From measurement he finds it about 154 sq. cm. in the nose and 25 in the nasopharynx. Some bacteria must reach the nasopharynx from which they are swallowed and digested. The flow of mucus and serum together with gravity tends to carry away the germs and the nasal mucus is not a good culture medium. Last and most important, the organisms which have reached the nose are expelled by the ciliated epithelium with great rapidity, and recent work seems to show that nasal epithelium has bactericidal power. The practical conclusions he deduces are: "1. It is advisable to sterilize the vestibule of the nose before operating. 2. After operation, the nostril on the operated side should be closed with a piece of cotton to act as a filter. 3. Plugging of the nasal cavity after operations is, as a rule, inadvisable, as it tends to retain the nasal secretions. 4. Nasal wounds do not heal by first intention, owing to the presence of bacteria. This also explains the occurrence of secondary hemorrhage. 5. Fever after operations and the few deaths recorded, have probably been due to the presence of pathogenic micro-organisms in the nose."

108. **Hydrocyanic Acid Disinfection.**—Fulton and Stokes give further results of their experiments with hydrocyanic acid as a disinfectant. The chemicals used are potassium cyanid, concentrated sulphuric acid and water, in the relative proportion of 1, 1.5, and 2.25. The amount of gas used was expressed in the terms of cyanid—25 grams of cyanid per 100 cubic feet of enclosed space. They connected three jars, placed at suitable relative elevations, by siphon tubes. The requisite amount of cyanid was placed in the lowest and largest jar, the intermediate jar contained water, and the upper the concentrated acid. The lower of the two siphons was automatic, and actuated by a definite height of liquid in the upper jar. It did not, therefore, operate until the last few ounces of liquid was being delivered from the upper jar into the intermediate one. By this means the operator had time to leave and close up behind him and there is no danger that the destructive chemicals will escape from their containers. The sides and floor of the room used for the experiments were covered with tar paper. The doors and windows were weather-stripped and two shelves were built across the window, and here the cages containing animals and insects were placed for easy observation. The exact moment when effervescence began was noted in their experiments and correctly timed observations were recorded. The animals and insects were exposed in tubes with cotton stoppers or in wire cages, the amount of defensive covering being always noted. House flies were killed in two to four minutes after effervescence began in the cyanid jar; wood-eating white termites in ten minutes; white rats and guinea pigs in the same time. Roaches were killed during eight or ten minutes if confined in a tube with one inch of cotton plugging; in nineteen minutes to one hour if protected with two to nine inches of cotton plug. Bedbugs were killed in fifteen minutes. Mosquitoes, culex, were dead in two and one-half minutes in an aquarium jar covered with cheesecloth and rapidly when protected with one and two inch plugs. Other animals like the ox louse, black ant, rats, mice, etc., were readily killed. Rats exposed in cages succumbed in a very few minutes, though

after thirty seconds' exposure they could be revived. Gas tested by test-paper quite a distance from the keyhole of the door was found to be rapidly diffusible. Bread, butter and milk were exposed for twenty-four hours to the action of hydrocyanic acid in vapor three times denser than that sufficient to destroy animals and then fed to rats and no poisonous effects were observed. He thinks the advantages of the gas for disinfection are numerous. It is highly diffusible, has no injurious effect on wood work, metal, textile fabrics, paint or foodstuffs, and rapidly escapes when doors and windows are opened. It does not require special attention to openings, all that is necessary being that the gas should have free access. Of course, it is dangerous to man, but not unmanageable, and after each experiment the room was entered instantly for the purpose of removing the insects and animals, the only precaution being to suspend respiration. It is specially useful in military hygiene, disinfection of hospital tents and mess tents, which can be done by merely closing the ventilators while the disinfection is being carried on and throwing up earth to close the opening between the tent and the soil. Latrines can also be fumigated in this way. While the suggestion to use this agent is not likely to be readily accepted on account of the general belief in its deadliness, the authors believe that cyanid is about as amenable to human purposes as many other substances of less ill-repute.

115. **Tetanus Antitoxin.**—Reasons for the relatively small incidence of tetanus and fatalities in the recent St. Louis epidemic with diseased antitoxin are given by Fisch as follows: 1. The use of tetanus antitoxin. He believes in tetanus antitoxin. Nearly 60 bottles of the contaminated antitoxin serum were dispensed and anti-tetanic serum was injected in a great number of cases even before the symptoms appeared. None of them developed tetanus. In one case where the incipient muscular stiffening was observed recovery followed the use of tetanus antitoxin, but none of the cases in advanced stages of tetanus recovered. 2. The fact that the contaminated serum producing the disease contained just enough toxin to prove fatal to a certain weight of human tissue. Clinical experiments showed that .10 c.c. of serum was a fatal dose for 300 grams of guinea-pig weight, and it was concluded by comparing the average weight of children, etc., that 10 c.c. of the contaminated serum contained the approximately fatal dose for human beings weighing 50 pounds, showing that the susceptibility to tetanus toxin in man is nearly equal to that of the guinea-pig and about half that of the horse. If there had been spores or the bacilli in the serum very few of the patients would have survived. 3. The observation that a great number of immunizing doses of this serum had been administered per os, and therefore did not exert their toxic effect. In at least fifteen cases the development of tetanus was prevented by the administration of serum by the mouth. In no case was any bad effect observed. According to Fisch we have known all along that the toxin of tetanus is not absorbed by the gastro-intestinal mucous membrane. It is a fact that active tetanus bacilli are not rarely inhabitants of human and animal intestines. It is, however, established that the membranes of very young animals or infants may be intoxicated in this way, and as explanatory of this, a histologic observation is offered. In the newborn and for a short time after birth the secretion of mucus by the gastric mucous membrane is not present. The epithelial cells of the newborn appear uniformly protoplasmatic, are free from granules and sharply defined towards the free surface. Only later, in some places can small masses of mucus be demonstrated. This formation of mucus appears in certain foci and is in the beginning restricted to the most superficial layers of the protoplasm of the cells. It is possible that the absence or slight extent of mucin-formation is favorable to the absorption of the toxin. He does not recommend this method of immunizing, however, as a general practice.

116. **Cleft Palate.**—According to Bartlett, who reviews the various methods of palatal surgery, Brophy's operation is for its purpose the best procedure at our command, inasmuch as it is the only one which gives to the bony arch its proper breadth, and the only one which can by reason of the slight hemorrhage caused and the little time required, be performed upon a poorly-nourished child at a period when perfect vocalization must be secured or the golden opportunity be forever lost.

120. **The Skull and Its Contents.**—This article is surgical, bearing on the question of operation for injuries, and Earles sums up that we should use the trephine or chisel in every case of severe injury to the head, carefully examine the soft parts, and, if injured, repair at once. If this is not done at the time of injury, then as soon after as circumstances will permit, in the hope of preventing secondary sclerosis. When sclerosis has become established thoroughly excise the diseased area, substituting healthy and comparatively non-irritating union for the old diseased condition, making certain that the offending area is the one removed.

127. **Alcohol.**—The conclusions reached by Storck are that small quantities of alcohol favor salivary and gastric digestion, but large quantities inhibit all the digestive functions. Alcohol, whisky, gin and brandy are less harmful to digestion perhaps than are malt liquors and wine, but the continuous use of alcohol in any form, even in small amount, is liable to prove detrimental to digestive processes. In persons of weak digestion alcohol is harmful unless given very well diluted. It should never be given when the stomach is empty. It is valuable in disease, requiring no primary assimilation, it yields force readily to an exhausted system and in small quantities promotes appetite. It is well to bear in mind that the purer the whisky or brandy the less destructive it is to the digestive processes. According to Dujardin-Beaumetz, the toxic effects of alcohols increase with the sum of their atonic weight, with the exception of the highest and lowest. Finally, it is true, as Wood says, that: "Science in no way contradicts the experience of every *bon vivant* that the small doses of alcohol increase, and larger amounts interfere with, the activity of digestion."

135. **Dandruff.**—According to Dyer dandruff is a product of seborrheic dermatitis, an infectious and inoculable disease, though we do not as yet know the special germ. The application of resorcin in bay rum 3 to 5 per cent. is, in his opinion, an absolute cure. He has had no patients who did not recover under this treatment if they left brushes alone. The first instruction he gives to a dandruff patient is to throw his brush into the fire and not get another until he tells him, and he does not tell him until he finds the scalp free from dandruff. Resorcin sometimes gives a yellow tinge to light or gray hair. The addition of salicylic acid solution will prevent this. Where there is any reason to forbid the use of resorcin, chloral hydrate in a 2 to 5 per cent. solution may be used, or the naphthol solution in the strength of a scruple to the ounce. He believes that dandruff may have serious consequences. It often starts colonies in other parts of the body, produces seborrheic conditions in the wings of the nose, and may even aid in the production of malignant disease.

## FOREIGN.

The Lancet, December 7.

**Pure Urea in the Treatment of Tuberculosis.** HENRY HARPER.—In this second article on the subject Harper reports seven cases treated with urea with remarkable success. He thinks it exerts a specific action on tuberculosis, quite as marked as that of mercury in syphilis, salicylate of sodium in rheumatism and iodid of potassium on bronchial asthma. The urea used was a synthetic product and he suggests that it is an interesting question whether that derived from animals would have the same effect. "Cases suitable for the administration of urea are: 1. Circumscribed pulmonary tuberculosis of the lung in which the sputum exhibits abundance of bacilli and only a limited number of cocci. 2. Enlarged tuberculous glands situated on any part of the body. 3. Tuberculous pleurisy (here in my cases urea acted like magic). 4. Tuberculous laryngitis. 5. Lupus. 6. Tuberculosis of the peritoneum with fluid in the peritoneal cavity. 7. Hydrocephalus in children. 8. Tabes mesenterica or carreau. Cases which are unsuitable are: 1. Pulmonary tuberculosis where cocci pre-

dominate, practically covering the whole field of the microscope, and the tubercle bacilli exhibit a short stumpy appearance, the typical Koch's bacillus being scanty. 2. Acute miliary tuberculosis with a high temperature (103 F. or over). 3. Gastritis. 4. The last stage of tuberculosis where the patient is dying. 5. When the patient has a temperature over 101. Mode of administration: To carry out the intensified method a beginning should be made with small doses of from 10 to 15 grains thrice daily, gradually increasing them up to 40, 50 or 60 grains as a maximum. Practically this amounts to ½ per cent. of artificial urea added to the normal quantity circulating in the blood." The way he came to prescribe urea was from the suggestion offered by the apparent immunity of gouty individuals. He asked himself if gouty salts are antagonistic to tuberculosis; is it not possible to administer these to tuberculosis? He quotes Dyce Duckworth, Harris, Beale, Weber and others in favor of this view. He believes that natural immunity has not received due recognition and he thinks there is almost a parallel in this respect between typhoid fever and tuberculosis as regards the greater susceptibility among country residents moving into town. The drift of medical opinion to-day is to ignore heredity and over-value contagion, assuming that every human being is vulnerable to tuberculosis. He suggests that the race has become somewhat immune by heredity. He has never yet seen any harm come from the administration of urea, and has obtained the best results from 40 to 50 gr. doses three times a day. The highest dose he has reached has been 70 grs. three times a day, which practically equals one-half the total quantity of urea excreted by the average healthy man. The notion current in all the textbooks that urea is a substance to be gotten rid of, is not in accordance with his experience. He now believes that uremia or anything like it can not be induced with urea, for here we have the toxalbumins to be reckoned with. The gain of flesh coincident with the ingestion of urea is an obvious fact demanding an explanation, and he suggests that it is nutritive and supplements the food. In all his cases where death followed after administering urea, mixed infection was the predominant feature, and he has come to believe that failure to respond to this drug is a differential test for true tuberculosis and mixed infection.

**The Pathogenesis of Fibrous Hyperplasia.** E. H. COLBECK.—The different forms of fibrosis, post-inflammatory, compensatory, fibrosis of mechanical congestion and senile fibrosis, are noticed in detail by the author. The first depends upon the increased functional activity due to increased nutrition. As regards the second, he thinks the treatment of fibroid degeneration is unscientific and incorrect. Overgrowth of tissue can not be called degeneration. The fibrosis of metabolic congestion is also a disturbance or loss of control over food supply and the relative increased nutritive stimulation of fibroid tissue cells. Senile fibrosis is also to be considered as a loss of control over nutrition, and while he has excluded the action of the nervous system in his consideration he believes it has an important influence. With the decline of functional activity there is no doubt a diminution of nervous influence, so that, with respect to their claim on nutritive supplies, the degraded functionating cells in their vegetative condition would be pitted against the purely vegetative connective-tissue cells; hence, the increased relative proliferation of the latter.

December 14.

**On Duodenal Ulcer and Its Surgical Treatment.** B. G. A. MOYNIHAN.—The subject of duodenal ulcer, acute and chronic, is gone over by Moynihan, who finds that it is generally situated in the first portion of the duodenum and may affect all ages, but is more frequent in men than in women. The symptoms are apt to be obscure and the co-existence of gastric and duodenal ulcer is in his opinion more frequent than generally believed, and may confuse the diagnosis. The cardinal symptoms are pain, which is generally experienced an hour or so after eating and referred to the epigastrium, or the right hypochondrium, or indefinitely to the upper part of the abdomen, hematemesis, which is an occasional and rather erratic symptom, and melena, which was observed in 9 of Perry and Shaw's 60 cases. Examination of the stools for small quantities of blood is so unusual that we must admit that this symptom may be more frequent than generally supposed. The complications are hemorrhage, perforation, cicatricial contraction, and induration and their sequelæ, periduodenitis and cancer. As regards treatment he reports two cases of perforation from acute ulcers, one treated by gastro-enterostomy by the Murphy button, the patient dying, and the other treated by stitching up the opening and drainage, with an uneventful recovery. Speed is important in this operation, the details of which are given at some length. He gives a tabulated analysis of 40 cases of operation for perforation. When subacute or chronic perforation leads to periduodenal or subphrenic abscess it should be opened in front if periduodenal, and if subphrenic through the anterior or lateral walls of the abdomen, or through a low intercostal space. If perforation is discovered it should be closed by suture, and a drainage tube should be passed down to the abscess cavity and left in for two or more days. A case is reported. When pain and gastrorrhagia or enterorrhagia are persistent and disabling, gastro-enterostomy should be performed, to rest the part and permit the healing of the ulcer. Cicatricial contraction and induration or periduodenitis are to be treated on the same principles by gastro-enterostomy. Four cases are reported, all of which recovered.

**Experimental Hemoglobinuria Caused by a Bacterial Toxin.** CHARLES TODD.—In this preliminary communication Todd reports the results of experiments with bacillus megatherium on guinea-pigs and other animals. He finds it produces megatheriolysin which resembles the toxins of diphtheria and tetanus in being extra-bacillary, being unstable at ordinary temperature, but less so than tetanolysin. Heating seems to destroy it rapidly. There exists apparently an anti-body in normal serum, exercising a very considerable anti-hemolytic action which is increased on heating. Filtered cultures produce hemoglobinuria in guinea-pigs to a very marked extent but not so much so in rabbits, when injected intravenously. He remarks that the fact that a widely distributed organism which has hitherto been regarded as practically non-pathogenic is capable of forming products bringing about in susceptible animals such profound blood-changes, is of the greatest interest, and though this bacillus may have no causal relation to any pathologic condition in man, the results obtained are suggestive in connection with the pathology of such diseases as blackwater fever, paroxysmal hemoglobinuria, and pernicious anemia.

British Medical Journal, December 14.

**Nephrectomy, Nephrolithotomy and Lithotomy.** T. JESSOP.—The subjects discussed by Jessop are nephrectomy in children, of which he does not speak very encouragingly, and says that he can not but emphasize the lack of confidence he feels in recommending operation in children suffering from malignant growths. Still he suggests the comparative safety of intraperitoneal inspection of the kidneys on the first suspicion of a growth, as it is only by early detection and prompt removal that we can hope to improve on our former unsatisfactory results. As regards nephrectomy in adults he is inclined to believe that the lumbar operation will be preferred in those cases in which sepsis is known or supposed to exist and for nephrectomy in which the growth is of recent origin and of small size, while the larger renal tumors will be attacked from the front with more prospect of success in proportion to our increased knowledge and attention to details in the operation itself, and to our ability to avert death from shock. The statement that nephrectomy in the adult gives more encouraging results than in children must be qualified in that it applies not to the immediate but only to the ultimate result. The immediate operation is not the worst thing in children, it is the future outcome of the cases. The author admits change of heart as regards operation for nephrolithotomy and he now holds it to be of value as compared with his former opinion. He specially commends the method of withdrawing the

kidney from its bed and exposing it outside, then splitting it into two symmetrical halves by incision from the convex border through to the pelvis and returning it to its natural position after having passed three or four catgut sutures deeply through the substance of the organ tied with just enough force to arrest the bleeding. This plan is adopted from Dr. Henry Morris, and he has used it for the removal of stone in five cases with the most satisfactory results. He thinks it is sure not only to remove the stone, but makes the operation safer and more effective. For vesical calculus he favors suprapubic operation and litholapaxy, using the latter whenever practicable, irrespective of the age of the patient, and the former when existing conditions forbid the other or seem specially to favor a shorter and severer operation.

**The Sanatorium Treatment of Pulmonary Tuberculosis.** R. W. PHILIP.—The sanatorium treatment, the system, open-air exercise, rest, diet, skin hygiene, medication, site of sanatorium, general condition of patient and stage of the disease are all discussed by the author. He believes that the constitutional condition has been hitherto too little considered in the treatment of pulmonary tuberculosis. The sanatorium treatment is physiological. It can be practiced at home or at any place where there is sufficient accommodation and appreciation of what is necessary, but there are grave difficulties in the way of home treatment. Success will depend upon the thoroughness with which the physiologic conditions are fulfilled, which, therefore, depends upon the physician. He recommends the establishment of some sort of tuberculosis colony where the convalescent patients might contribute by working for the common good, remaining all the time under medical supervision.

## Queries and Minor Notes.

IS ABORTION JUSTIFIABLE IN THE INSANE PREGNANT?

CINCINNATI, Dec. 18, 1901.

*To the Editor:*—A young woman shortly after marriage, was discovered to be mentally unsound, the character of her mental condition being akin to paranoia. Her husband is a neurasthenic with a bad heredity; her mother has paranoia and has been in the asylum 35 years; father was an inebriate. The woman is pregnant. Whether pregnancy will affect her mental condition favorably or unfavorably is uncertain; probably it will affect it very little either way. But there is little doubt the child would be a degenerate.

Now, would it be justifiable to produce an abortion to prevent the birth of such a child, or could such a procedure under the circumstances be considered criminal? P. Z.

ANS.—It would be criminal.

PARTNERSHIP WITH UNLICENSED AND NON-DIPLOMAED BROTHER.

————, MICH., Dec. 23, 1901.

*To the Editor:*—Will you kindly decide the following question: We have here a physician registered under the laws of this state who has taken his brother into partnership with him and passes him off as a licensed physician. This brother has not received a certificate from the State Board, nor has he a diploma from a medical college. Would it be considered proper for reputable physicians to consult with this doctor whose partner is an irregular practitioner? G. H. W.

ANS.—The case is one for the attention of the State Board of Examiners, and we would suggest that our correspondent write to the secretary, Dr. B. D. Harison, Sault Ste. Marie, and report to him the facts. It would be a good plan for a reputable physician to treat his brother practitioner who may not be doing just as he ought, in a liberal and brotherly way. Petty jealousies are often the result of misunderstandings; possibly there is some misunderstanding in this case. In any event if our correspondent will do with his fellow practitioner as good old Ben Franklin would have done in a like instance, there will be a better feeling between the two physicians in this Michigan village.

IS METALLIC PLATE USED IN TREPHINED SKULL?

LAKE CITY, COLO., Dec. 19, 1901.

*To the Editor:*—Will you kindly let me know through the columns of THE JOURNAL or otherwise whether modern surgeons put in silver or gold or other kind of plate when a portion of the skull is removed after fracture? Has it ever been done? If not commonly done what are the objections to it? J. G.

ANS.—The most obvious objection would be the danger of infection from without from an exposed foreign body in that situation, unless the skin healed on the plate. It has been done, but we do not see it recommended now. Transplantation of bone, replacement of bone button, or an osteoplastic flap from the external table are sometimes resorted to. The insertion of silver or gold foil over the exposed brain or meninges is sometimes performed.

MOOD OF "FIAT CAPSULA."

U. S. MARINE BARRACKS, WASHINGTON D. C., Dec. 4, 1901.

*To the Editor:*—One of the events of the week is the arrival of THE JOURNAL at the Dispensary here. Even a layman like myself can always find a great many articles by which the gray matter may be improved. I am, let me state, old-fashioned. In your issue of November 30, of this year, under the heading of "Therapeutics," you say "The word *misce* means, when translated, mix thou." It does. It is a command issued by the physician to the pharmacist. You proceed to say that the word "*Fiat*—meaning may be made—is in the subjunctive mood." Is it? Is not *fiat* more properly of the imperative mood? Does the doctor, in the first instance, say mix thou, and in the second, you may (if you like) make the substance into, say, six capsules, or if that number does not just suit you, please yourself? Does the doctor mean that he has no choice as to whether the patient gets his medicine in powder, capsule, or pill form? I am open to correction, but in my humble opinion the prescriber intends to be just as emphatic in the second case as in the first.

As to the parsing of the sentence "*fiant capsulæ*," a rule of Latin syntax, which I quote from memory, is as follows: Verba substantiva ut sum, fio, existo; verba vocandi passiva ut nominor, appellor, dicor, vocor, nuncupor et iis similia, utrinque eosdem casus habent. Brevis esse laboro, obscurus fio.

The word *spiritus* which you mention in the first paragraph, leads me to ask which is the correct form—*spiritus frumenti*, or *spiritus frumentis*. Respectfully, C. P.

ANS.—1. The verb *fiat* is, as was stated in THE JOURNAL of November 30, in the subjunctive mood, but with an imperative force. The imperative forms of the verb would be *fi* in the singular, and *fite* in the plural.

The reason why the more regular verb *facere* was not used in the imperative, as *fac*, "make thou" like *misce*, "mix thou" is probably because *facere*, "to make," was used also in the sense of "to administer," "to give; for instance, Cicero says: *Medicinam alicui facere*, with the meaning "to administer medicine to a person." Hence, *fac pilulas xii* could also mean "give 12 pills," and to avoid ambiguity the old physicians were obliged to use the semi-deponent and irregular *fieri*, "to become, to be made."

2. *Spiritus frumenti* is correct, the nominative being *frumentum*.

## Books Received.

Acknowledgment of all books received will be made in this column, and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interests of our readers.

THE PRACTICAL MEDICINE SERIES OF YEAR-BOOKS, Comprising Ten Volumes on the Year's Progress in Medicine and Surgery. Issued Monthly under the General Editorial Charge of Gustavus P. Head, M.D., Professor of Laryngology and Rhinology, Chicago Post-Graduate Medical School. Vol. I. General Medicine. Edited by Frank Billings, M.S., M.D., Head of Medical Department and Dean of the Faculty of Rush Medical College, Chicago. With the Collaboration of S. C. Stanton, M.D. October, 1901. Cloth. Pp. 270. Price, per volume, $1.50. Chicago: The Year-Book Publishers.

GYNECOLOGICAL PATHOLOGY. A Manual of Microscopic Technique and Diagnosis in Gynecological Practice for Students and Physicians. By Dr. Carl Abel, Privat-Docent, Berlin. Translated and Edited by Samuel Wyllis Bandler, M.D., Adjunct Gynecologist to the Beth Israel Hospital, New York. With a Chapter on Embryology of the Female Genitalia and the Pathological Growths Developing from Embryonal Structures. Illustrated by 100 Engravings. Cloth. Pp. 237. Price, $2.50. New York: William Wood & Co. 1901.

PROGRESSIVE MEDICINE, VOL. IV. 1901. A Quarterly Digest of Advances, Discoveries and Improvements in the Medical and Surgical Sciences. Edited by Hobart Amory Hare, M.D., Professor of Therapeutics and Materia Medica in the Jefferson Medical College of Philadelphia. Octavo, handsomely bound in cloth, 400 pages, 13 illustrations. Price, per annum, in four cloth-bound volumes, $10.00. Philadelphia and New York: Lea Brothers & Co.

PHOTOGRAPHIC ATLAS OF THE DISEASES OF THE SKIN. A Series of 80 Plates, Comprising More Than 100 Illustrations, with Descriptive Text, and a Treatise on Cutaneous Therapeutics. By George Henry Fox, A.M., M.D., Clinical Professor of Diseases of the Skin, College of Physicians and Surgeons, N. Y. Part VI. In 16 Portfolio parts at $1.50 each. Philadelphia and London: J. B. Lippincott Co. 1901.

PERU—HISTORY OF COCA, "The Divine Plant" of the Incas, with an Introductory Account of the Incas, and of the Andean Indians of To-day. By W. Golden Mortimer, M.D., Fellow of the New York Academy of Medicine. With 178 Illustrations. Cloth. Pp. 576. Price, $5.00. New York: J. H. Vail & Co. 1901.

OFFICIAL LIST OF PHYSICIANS AND SURGEONS Who Have Received Certificates of Registration under Public Act 237, Laws of 1899, Michigan. By Authority of State Board of Registration in Medicine. November 1, 1901. Paper. Pp. 88. Sault Ste. Marie, Mich.: News-Record Press.

A COMPLETE EXPOSE OF EDDYISM OR CHRISTIAN SCIENCE, and the Plain Truths in Plain Terms Regarding Mary Baker G. Eddy, Founder of Christian Science. By Frederick W. Peabody, Member of the Boston Bar. Paper. Pp. 68. Price, $0.25.

MEDICAL AND SURGICAL REPORTS OF THE BOSTON CITY HOSPITAL. Twelfth Series. Edited by Herbert L. Burrell, M.D.; W. T. Councilman, M.D., and Charles F. Withington, M.D. Paper. Pp. 201. Boston: Published by the Trustees. 1901.

WATER AND WATER SUPPLIES. By John C. Thresh, D.Sc. (London), M.D. (Victoria), D.P.H. (Cambridge). Third Edition, Revised and Enlarged. Cloth. Pp. 527. Price, $2.00 net. Philadelphia: P. Blakiston's Son & Co. 1901.

A MANUAL OF CLINICAL LABORATORY METHODS. By John Benjamin Nichols, M.D., in Charge of the Clinical Laboratory, Garfield Hospital. Illustrated. Cloth. Pp. 303. Price, $2.50. New York: William Wood & Co. 1902.

THE LIFE OF PASTEUR. By René Vallery-Radot. Translated from the French by Mrs. R. L. Devonshire. Vols. I and II. Cloth. Pp. 292 and 336 Respectively. Price, $7.50. New York: McClure, Phillips & Co. 1902.

REPORT OF THE SURGEON-GENERAL OF THE ARMY to the Secretary of War, for the Fiscal Year Ending June 30, 1901. Paper. Pp. 354. Washington: Government Printing Office. 1901.

### New Patents.

Patents of interest to Physicians, December 3 and 10:

687,978. Sterilizer. Arthur Castle, Rochester, N. Y.
688,163. Head-bandage. Bettie P. Fields, Mason, Tenn.
687,994. Producing chemically pure hydrochloric acid. Eugen de Haen, List, near Hanover, Germany.
687,748. Automatic distributor for powders. Per B. Harje, Karpalund, Sweden.
687,750. Artificial limb. Max Held, Milwaukee, Wis.
688,102. Reducing and deodorizing residues. Walter P. Lincoln, and M. S. Greenbaum, Louisville, Ky.
688,188. Tampon. Anthony E. Magoris, Binghamton, N. Y.
688,131. Obtaining ianthone and ionone. Ferdinand Sembritzki, Holzminden, Germany.
35,373. Design, hot-water bag. John B. Miller, Chicago.
688,499. Exercising device. Wm. G. Bell, Sharonhill, Pa.
688,581. Massage instrument. Otto Bihlmaier, Brunswick, Germany.
688,458. Stereoscopic *x*-ray apparatus. Eugene W. Caldwell, New York City.
688,604. Producing blood-albumen. Max Dietrich and A. Langer, Berlin, Germany.
688,463. Making caustic alkali. Hans A. Frasch, Hamilton, Canada.
688,465. Movement cure apparatus. Ernst F. Goransson, Stockholm, Sweden.
688,734. Hernial truss. George V. House, Mount Vernon, N. Y.
688,311. Artificial limb. Lowell E. Jepson, Minneapolis, Minn.
688,688. Syringe. Walter H. Humphrey, New York City.
688,695. Hernial truss. Louis Ropers, Lincoln, Ill.
688,354. Bandage or compress. Siegmund B. Sonneborn and H. Beigel, Baltimore, Md.
688,371. Suspensory. George A. Wieland, Duluth, Minn.
688,804. Suspensory. George A. Wieland, Duluth, Minn.
35,417. Design, vaccination shield. Joseph A. Steinmetz, Philadelphia, Pa.

## The Public Service.

### Army Changes.

Movements of Army Medical Officers under orders from the Adjutant-General's Office, Washington, D. C., Dec. 12 to 18, 1901, inclusive:

John M. Banister, major and surgeon, U. S. A., from duty at the U. S. Military Academy, West Point, N. Y., to accompany troops on the transport *Buford* sailing from New York City, about Jan. 15, 1902, to Manila, P. I., where he will report for assignment in the Division of the Philippines.

Walter K. Beatty, contract surgeon, leave of absence from the Department of Colorado extended one month.

Charles E. B. Flagg, captain, asst.-surgeon, U. S. A., member of a board at Fort Grant, Ariz., to determine the fitness of certain officers for promotion.

Bower E. Himes, contract surgeon, previous orders revoked; he is relieved from duty at Fort Keogh, Mont., and will proceed to his home, Mill Creek, Pa., for annulment of contract.

William F. Lippitt, Jr., captain, asst.-surgeon, U. S. A., honorably discharged by the Secretary of War as major and surgeon, Vols., only, to take effect Dec. 31, 1901; he is relieved from duty in the Philippines, and on the expiration of his present leave will report for duty at Fort McHenry, Md.

Alexander N. Stark, captain, asst.-surgeon, U. S. A., from Fort McHenry, Md., to the U. S. Military Academy, West Point, N. Y., to relieve Major John M. Banister, surgeon, U. S. A.

Francis M. Wall, contract surgeon, from the Division of the Philippines to Fort Thomas, Ky.

### Navy Changes.

Changes in the Medical Corps of the Navy, for the week ending Dec. 21, 1901:

Asst.-Surgeon John B. Buchanan, appointed from Nov. 23, 1901.
Medical Director R. C. Persons, commissioned from Nov. 3, 1901.
Medical Inspector E. H. Green, commissioned from Nov. 3, 1901.
Medical Inspector L. G. Heneberger, commissioned from Oct. 29, 1901.
P. A. Surgeon H. H. Haas, commissioned from Dec. 28, 1900.
P. A. Surgeon C. A. Crawford, commissioned from June 1, 1901.
P. A. Surgeon E. Thompson, commissioned from April 19, 1901.
Asst.-Surgeon D. G. Beebe, resignation accepted, to take effect Nov. 30, 1901.
Medical Director A. L. Gihon, retired, died Nov. 16, at New York City.
Asst.-Surgeon E. Davis, died Nov. 15, at East Las Vegas, New Mexico.

### Marine-Hospital Changes.

Official list of the Changes of station and duties of commissioned and non-commissioned officers of the U. S. Marine-Hospital Service for the seven days ended Dec. 19, 1901:

Surgeon H. R. Carter, granted leave of absence for ten days from Dec. 26, 1901.
P. A. Surgeon W. G. Stimpson, detailed as inspector of unserviceable property at the San Francisco quarantine station.
P. A. Surgeon J. B. Greene, to proceed to Malone and Roues Point, N. Y., for special temporary duty.
Asst.-Surgeon S. B. Grubbs, granted leave of absence for nine days from December 26.
Asst.-Surgeon J. F. Anderson, relieved from duty in the office of the U. S. Consul at Liverpool, England, and directed to return to the United States.
Asst.-Surgeon L. D. Fricks, granted leave of absence for thirty days from December 16.
Asst.-Surgeon W. C. Hobdy, to proceed to Jacksonville, Fla., for the purpose of making a physical examination of the Local Inspector of Hulls at that port.
Asst.-Surgeon Carroll Fox, assigned to duty in the office of the U. S. Consul at Liverpool, England, relieving Asst.-Surgeon J. F. Anderson.
Asst.-Surgeon Jos. Goldberger, granted leave of absence for fourteen days from December 21
Asst.-Surgeon J. S. Boggess, ten days' extension of leave of absence granted by bureau telegram of December 10, revoked.
Hospital Steward F. S. Goodman, relieved from duty in the Hygienic Laboratory, and directed to proceed to Key West, Fla., and report to medical officer in command for duty and assignment to quarters.
Hospital Steward M. H. Watters, relieved from duty at Boston, Mass., and directed to proceed to Washington, D. C., and report at the Bureau for orders.

### Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, U. S. Marine-Hospital Service, during the week ended Dec. 20, 1901:

SMALLPOX—UNITED STATES.

California: San Francisco, Dec. 1-8, 1 case.
Georgia: Elberton, Dec. 12, 12 cases.
Indiana: Evansville, Dec. 7-14, 2 cases.
Maryland: Baltimore, Dec. 7-14, 1 case.
Massachusetts: Dec. 7-14, Boston, 60 cases, 6 deaths; Cambridge, 1 case, 1 death; Medford, 1 case.
Minnesota: Winona, Dec. 7-14, 2 cases.
Nebraska: Omaha, Nov. 30-Dec. 14, 22 cases; South Omaha, Nov. 30-Dec. 14, 40 cases
New Jersey: Camden, Dec. 7-14, 10 cases; Jersey City, Dec. 1-15, 23 cases; Newark, Dec. 7-14, 26 cases, 3 deaths.
New York: New York, Dec. 7-14, 10 cases, 2 deaths.
Ohio: Ashtabula, Dec. 7-14, 3 cases; Cincinnati, Dec. 6-13, 6 cases.
Pennsylvania: Allegheny City, Nov. 30-Dec. 7, 1 case, 1 death; Lebanon, Dec. 9-16, 25 cases; Norristown, Dec. 7-14, 2 cases; Philadelphia, Dec. 7-14, 125 cases, 8 deaths.
Tennessee: Dec. 7-14, Memphis, 7 cases; Nashville, 1 case.
Utah: Salt Lake City, Dec. 7-14, 2 cases.
Vermont: Burlington, Dec. 7-14, 4 cases.
Washington: Tacoma, Dec. 1-8, 1 case.
West Virginia: Wheeling, Dec. 7-14, 1 case.
Wisconsin: Fond du Lac, Dec. 3-10, 1 case; Green Bay, Dec. 8-15, 11 cases.

SMALLPOX—FOREIGN.

Austria: Prague, Nov. 16-23, 7 cases.
Brazil: Pernambuco, Oct. 15-31, 72 deaths.
Canada: Quebec, Dec. 7-14, 25 cases; St. John, Nov. 30-Dec. 7, 16 cases; Windsor, Dec. 7-14, 1 case.
Colombia: Panama, Dec. 2-9, 25 cases.
France: Paris, Nov. 23-30, 2 deaths; Rheims, Dec. 16-20, 2 cases.
Great Britain: Glasgow, Nov. 29-Dec. 6, 4 cases; London, Nov. 23-30, 427 cases, 23 deaths.
Russia: St. Petersburg, Nov. 16-23, 1 case.

YELLOW FEVER.

Mexico: Vera Cruz, Nov. 30-Dec. 7, 8 deaths.

PLAGUE—FOREIGN AND INSULAR.

Philippines: Manila, Oct. 12-25, 5 deaths.
India: Bombay, Nov. 19, 181 deaths; Karachi, Nov. 10-17, 49 deaths.